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WATER QUALITY IN THE CLARK FORK RIVER BASIN, MONTANA

STATE FISCAL YEARS 1988-1989

APPENDICES

Final Project Report to the
Resource Indemnity Trust Grant Program
Montana Department of Natural Resources and Conservation

Prepared by:

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State of Montana
Department of Health and Environmental Sciences
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Cogswell Building
Helena, Montana 59620

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A P P E N D I X A

FY 1988

CLARK FORK BASIN

METALS MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 00 Silver Bow Creek above Butte WWTP

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	11.3	(I)	7.00	107	160	200	611	10
Jul 27	14.6	(I)	7.10	98	162	390	861	16
Aug 11	11.4	(I)	7.55	103	166	310	878	13
Sep 14	10.9	(I)	7.20	103	164	280	796	10
Oct 13	9.5	(I)	6.60	106	156	230	743	8
Nov 16	9.0	(I)	7.40	100	162	210	668	8
Dec 15	5.6	(I)	7.00	108	158	180	472	9
Jan 12	7.6	(I)	7.40	99	167	170	552	7
Feb 9	9.6	(I)	7.60	99	165	240	729	8
Mar 8	10.2	(I)	7.45	98	176	300	732	9
Mar 29	12.3	(I)	7.35	92	151	250	661	10
Apr 12	21.8	(I)	7.60	87	128	150	399	8
Apr 20	28.2	(I)	7.50	77	125	290	929	17
May 2	17.1	(I)	7.05	94	144	160	511	10
May 17	15.4	(I)	7.35	96	149	170	511	9
May 31	18.8	(I)	7.10	92	149	310	937	12
Jun 14	10.2	(I)	6.85	103	186	260	827	11
N=	17		17	17	17	17	17	17
Max	28.2		7.60	108	186	390	937	17
Min	5.6		6.60	77	125	150	399	7
Mean	13.1		7.24	98	157	241	695	10

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00 Silver Bow Creek above Butte WWTP

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	13.0	7.05	103	161	295	736	13
AUG	1	11.4	7.55	103	166	310	878	13
SEP	1	10.9	7.20	103	164	280	796	10
OCT	1	9.5	6.60	106	156	230	743	8
NOV	1	9.0	7.40	100	162	210	668	8
DEC	1	5.6	7.00	108	158	180	472	9
JAN	1	7.6	7.40	99	167	170	552	7
FEB	1	9.6	7.60	99	165	240	729	8
MAR	2	11.3	7.40	95	164	275	697	10
APR	2	25.0	7.55	82	127	220	664	13
MAY	2	16.3	7.20	95	147	165	511	10
JUN	2	14.5	6.98	98	168	285	882	12
N=		12	12	12	12	12	12	12
Max		25.0	7.60	108	168	310	882	13
Min		5.6	6.60	82	127	165	472	7
Mean		12.0	7.24	99	159	238	694	10
Annual Metals Load (tons/year)						2.82	8.23	0.12

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	100%	100%	0%
Acute Criterion	100%	100%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	13.6 X	4.4 X	0.1 X
Acute Criterion	8.7 X	4.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	13.59	4.43	0.00
ACUTE	8.71	4.01	0.00

CUMULATIVE SCORE	
CHRONIC	18.02
ACUTE	12.72

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 00.5 Butte Metro WWTP discharge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)		TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Sep 14	9.9	(I)	6.90	130	137	70		1270	5
Oct 13	8.9	(I)	6.55	132	116	10		64	3
Nov 16	8.0	(I)	7.45	132	98	10	<	55	3
Dec 15	8.9	(I)	6.85	141	99	10		70	3
Jan 12	9.1	(I)	7.30	139	104	20		68	3
Feb 9	9.0	(I)	7.80	142	100	10	<	79	2
Mar 8	13.2	(I)	7.20	132	98	20		92	3
Mar 29	7.4	(I)	7.45	131	87	10	<	66	2
Apr 12	9.1	(I)	7.40	124	86	10	<	75	2
Apr 20	9.3	(I)	6.72	118	92	10	<	66	2
May 2	9.2	(I)	7.40	127	99	10	<	43	3
May 17	7.6	(I)	7.30	125	94	10		53	2
May 31	8.7	(I)	7.20	95	76	20		93	4
Jun 14	6.7	(I)	6.55	113	92	10		66	2
N=	14		14	14	14	14		14	14
Max	13.2		7.80	142	137	70		1270	5
Min	6.7		6.55	95	76	10	<	43	2
Mean	8.9		7.15	127	98	12		154	3

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00.5 Butte Metro WWTP discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	0	7.6						
AUG	0	7.6						
SEP	1	7.0	6.90	130	137	70	1270	5
OCT	1	6.6	6.55	132	116	10	64	3
NOV	1	6.6	7.45	132	98	10 <	55	3
DEC	1	7.6	6.85	141	99	10	70	3
JAN	1	8.0	7.30	139	104	20	68	3
FEB	1	8.1	7.80	142	100	10 <	79	2
MAR	2	8.0	7.33	132	93	10	79	3
APR	2	8.1	7.06	121	89	10 <	71	2
MAY	2	8.0	7.35	126	97	10 <	48	3
JUN	2	8.3	6.88	104	84	15	80	3
N=		12	10	10	10	10	10	10
Max		8.3	7.80	142	137	70	1270	5
Min		6.6	6.55	104	84	10 <	48	2
Mean		7.6	7.15	130	102	14	188	3
Annual Metals Load (tons/year)						0.08	1.11	0.02

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	30%	15%	0%
Acute Criterion	30%	15%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	1.0 X	1.5 X	0.0 X
Acute Criterion	0.7 X	1.4 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.30	0.23	0.00
ACUTE	0.20	0.21	0.00

CUMULATIVE SCORE	
CHRONIC	0.53
ACUTE	0.41

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 01 Silver Bow Creek below Colorado Tailings

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	19.0	(M)	6.90	115	150	210	855	11
Jul 27	26.0	(M)	7.25	104	159	290	1020	16
Aug 11	25.0	(M)	7.40	109	158	230	957	12
Sep 14	21.0	(M)	7.25	107	157	200	1200	9
Oct 13	23.0	(M)	6.65	109	154	180	708	8
Nov 16	20.0	(M)	7.45	106	147	230	779	12
Dec 15	17.0	(M)	7.40	114	143	260	718	11
Jan 12	17.0	(M)	7.35	112	147	270	762	9
Feb 9	17.0	(M)	7.65	110	149	190	820	9
Mar 8	20.0	(M)	7.40	108	154	360	921	12
Mar 29	23.0	(M)	7.40	100	138	260	843	10
Apr 12	36.0	(M)	7.60	93	125	200	636	9
Apr 20	50.0	(M)	6.85	86	128	410	1400	20
May 2	24.0	(M)	7.55	102	138	170	709	10
May 17	24.0	(M)	7.45	102	147	180	795	10
May 31	36.0	(M)	7.10	90	141	380	1420	15
Jun 14	18.0	(M)	6.70	103	171	210	1020	10
N=	17		17	17	17	17	17	17
Max	50.0		7.65	115	171	410	1420	20
Min	17.0		6.65	86	125	170	636	8
Mean	24.5		7.26	104	147	249	915	11

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 01 Silver Bow Creek below Colorado Tailings

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	34.1	7.08	110	155	250	938	14
AUG	1	27.7	7.40	109	158	230	957	12
SEP	1	22.2	7.25	107	157	200	1200	9
OCT	1	21.8	6.65	109	154	180	708	8
NOV	1	20.2	7.45	106	147	230	779	12
DEC	1	17.9	7.40	114	143	260	718	11
JAN	1	17.2	7.35	112	147	270	762	9
FEB	1	18.6	7.65	110	149	190	820	9
MAR	2	22.1	7.40	104	146	310	882	11
APR	2	33.9	7.23	90	127	305	1018	15
MAY	2	27.4	7.50	102	143	175	752	10
JUN	2	20.7	6.90	97	156	295	1220	13
N=		12	12	12	12	12	12	12
Max		34.1	7.65	114	158	310	1220	15
Min		17.2	6.65	90	127	175	708	8
Mean		23.7	7.27	106	148	241	896	11
Annual Metals Load (tons/year)						5.65	21.10	0.26

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	100%	100%	0%
Acute Criterion	100%	100%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	14.7 X	6.1 X	0.1 X
Acute Criterion	9.5 X	5.5 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	14.66	6.06	0.00
ACUTE	9.45	5.49	0.00

CUMULATIVE SCORE	
CHRONIC	20.71
ACUTE	14.94

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	17.8	(I)	7.10	102	164	260	749	18
Jul 27	23.7	(I)	7.65	91	144	190	564	13
Aug 11	19.2	(I)	7.80	99	150	160	597	11
Sep 14	17.2	(I)	7.95	100	178	160	933	12
Oct 13	21.0	(I)	7.10	107	166	160	670	12
Nov 16	19.4	(I)	8.20	105	155	130	546	10
Dec 15	16.0	(E)	7.60	116	172	290	757	24
Jan 12	15.0	(E)	7.65	111	178	270	877	15
Feb 9	14.6	(I)	7.90	107	163	140	648	12
Mar 8	20.3	(I)	7.40	103	167	170	661	11
Mar 29	21.1	(I)	8.00	100	152	160	564	10
Apr 12	25.5	(I)	7.50	96	151	230	712	14
Apr 20	29.7	(I)	6.75	84	159	540	1320	33
May 2	22.1	(I)	7.90	101	157	200	680	14
May 17	29.2	(I)	7.35	95	148	150	522	16
May 31	23.8	(I)	7.20	77	166	780	2150	30
Jun 14	20.3	(I)	7.75	81	142	170	531	11
N=	17		17	17	17	17	17	17
Max	29.7		8.20	116	178	780	2150	33
Min	14.6		6.75	77	142	130	522	10
Mean	20.9		7.58	99	160	245	793	16

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	20.8	7.38	97	154	225	657	16
AUG	1	19.2	7.80	99	150	160	597	11
SEP	1	17.2	7.95	100	178	160	933	12
OCT	1	21.0	7.10	107	166	160	670	12
NOV	1	19.4	8.20	105	155	130	546	10
DEC	1	16.0	7.60	116	172	290	757	24
JAN	1	15.0	7.65	111	178	270	877	15
FEB	1	14.6	7.90	107	163	140	648	12
MAR	2	20.7	7.70	102	160	165	613	11
APR	2	27.6	7.13	90	155	385	1016	24
MAY	2	25.7	7.63	98	153	175	601	15
JUN	2	22.1	7.48	79	154	475	1341	21
N=		12	12	12	12	12	12	12
Max		27.6	8.20	116	178	475	1341	24
Min		14.6	7.10	79	150	130	546	10
Mean		19.9	7.63	101	161	228	771	15
Annual Metals Load (tons/year)						4.60	15.25	0.30

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	100%	100%	0%
Acute Criterion	100%	100%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	12.9 X	4.9 X	0.1 X
Acute Criterion	8.2 X	4.4 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	12.86	4.85	0.00
ACUTE	8.23	4.40	0.00

CUMULATIVE SCORE	
CHRONIC	17.72
ACUTE	12.63

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGHAN

Monitoring Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	32.2	(I)	7.40	101	161	210	469	20
Jul 27	57.2	(I)	7.90	95	149	210	504	21
Aug 11	51.5	(I)	8.20	101	154	200	525	18
Sep 14	35.5	(I)	8.25	105	158	110	479	14
Oct 13	39.2	(I)	6.95	109	172	180	674	14
Nov 16	44.4	(I)	8.40	104	155	130	548	12
Dec 15	38.0	(E)	7.80	118	176	160	637	15
Jan 18	32.0	(E)	7.75	102	165	170	671	13
Feb 9	38.4	(I)	7.95	99	153	160	595	15
Mar 8	40.9	(I)	7.80	101	158	220	688	15
Mar 29	46.8	(I)	8.20	99	156	170	566	12
Apr 12	54.4	(I)	8.20	90	146	260	639	17
Apr 20	78.3	(I)	7.20	74	130	350	850	26
May 2	56.8	(I)	7.95	91	139	150	618	14
May 17	81.5	(I)	7.70	84	120	120	342	15
May 31	85.9	(I)	6.81	58	114	530	1190	41
Jun 14	43.2	(I)	8.00	87	143	130	375	15
N=	17		17	17	17	17	17	17
Max	85.9		8.40	118	176	530	1190	41
Min	32.0		6.81	58	114	110	342	12
Mean	50.4		7.79	95	150	204	610	17

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	44.7	7.65	98	155	210	487	21
AUG	1	51.5	8.20	101	154	200	525	18
SEP	1	35.5	8.25	105	158	110	479	14
OCT	1	39.2	6.95	109	172	180	674	14
NOV	1	44.4	8.40	104	155	130	548	12
DEC	1	38.0	7.80	118	176	160	637	15
JAN	1	32.0	7.75	102	165	170	671	13
FEB	1	38.4	7.95	99	153	160	595	15
MAR	2	43.9	8.00	100	157	195	627	14
APR	2	66.4	7.70	82	138	305	745	22
MAY	2	69.2	7.83	88	130	135	480	15
JUN	2	64.6	7.41	73	129	330	783	28
N=		12	12	12	12	12	12	12
Max		69.2	8.40	118	176	330	783	28
Min		32.0	6.95	73	129	110	479	12
Mean		47.3	7.82	98	153	190	604	17
Annual Metals Load (tons/year)						9.30	28.31	0.80

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	100%	100%	0%
Acute Criterion	100%	100%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	11.4 X	4.0 X	0.1 X
Acute Criterion	7.4 X	3.6 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	11.41	4.00	0.00
ACUTE	7.35	3.62	0.00

CUMULATIVE SCORE	
CHRONIC	15.41
ACUTE	10.98

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	29.7	(I)	8.65	75	156	30	47	10
Jul 27	27.3	(I)	8.70	67	151	10	16	10
Aug 11	23.3	(I)	9.10	72	158	10 <	11	13
Sep 14	28.7	(I)	9.05	73	172	10 <	7	10
Oct 13	25.6	(I)	8.20	83	184	10 <	10	6
Nov 16	40.4	(I)	8.75	97	208	10	43	8
Dec 15	33.0	(I)	7.90	114	224	20	63	7
Jan 12	26.2	(I)	7.80	126	254	20	126	7
Feb 9	31.5	(I)	8.05	126	245	30	156	10
Mar 8	36.0	(I)	8.68	92	202	30	96	10
Mar 29	39.7	(I)	9.00	81	214	30	119	8
Apr 12	48.6	(I)	8.60	75	193	20	100	9
Apr 20	97.8	(I)	8.60	74	180	10	41	11
May 2	57.0	(I)	8.90	84	197	20	68	10
May 17	69.8	(I)	8.75	86	179	10 <	23	12
May 31	104.1	(I)	8.30	80	166	10	20	8
Jun 14	23.7	(I)	8.65	63	172	10 <	22	10
N=	17		17	17	17	17	17	17
Max	104.1		9.10	126	254	30	156	13
Min	23.3		7.80	63	151	10 <	7	6
Mean	43.7		8.57	86	191	14	57	9

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	28.5	8.68	71	154	20	32	10
AUG	1	23.3	9.10	72	158	10 <	11	13
SEP	1	28.7	9.05	73	172	10 <	7	10
OCT	1	25.6	8.20	83	184	10 <	10	6
NOV	1	40.4	8.75	97	208	10	43	8
DEC	1	33.0	7.90	114	224	20	63	7
JAN	1	26.2	7.80	126	254	20	126	7
FEB	1	31.5	8.05	126	245	30	156	10
MAR	2	37.9	8.84	87	208	30	108	9
APR	2	73.2	8.60	75	187	15	71	10
MAY	2	63.4	8.83	85	188	10	46	11
JUN	2	63.9	8.48	72	169	10 <	21	9
N=		12	12	12	12	12	12	12
Max		73.2	9.10	126	254	30	156	13
Min		23.3	7.80	71	154	10 <	7	6
Mean		39.6	8.52	90	196	13	58	9
Annual Metals Load (tons/year)						0.49	2.20	0.36

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	21%	0%	0%
Acute Criterion	4%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.6 X	0.3 X	0.0 X
Acute Criterion	0.4 X	0.3 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.12	0.00	0.00
ACUTE	0.02	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.12
ACUTE	0.02

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 05 Mill-Willow Bypass at mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	19.7	(I)	7.70	123	301	20	20	33
Jul 27	29.7	(I)	8.00	111	251	20	30	75
Aug 11	16.1	(I)	8.20	119	346	20	28	31
Sep 14	13.5	(I)	8.10	122	370	20	30	26
Oct 13	17.2	(I)	7.65	116	344	20	38	15
Nov 16	20.5	(I)	8.40	110	297	30	57	13
Dec 15	15.1	(I)	8.10	130	374	20	69	11
Jan 12	18.9	(I)	7.95	112	307	30	75	10
Feb 9	22.6	(I)	8.05	115	310	20	53	10
Mar 8	22.8	(I)	8.19	107	306	20	45	14
Mar 29	22.5	(I)	8.50	105	300	20	40	10
Apr 12	28.7	(I)	7.90	105	263	30	52	18
Apr 20	46.2	(I)	7.30	75	183	60	90	25
May 2	41.8	(I)	8.10	81	187	30	36	21
May 17	85.7	(I)	7.70	57	111	80	90	33
May 31	78.3	(I)	7.60	62	138	70	78	27
Jun 14	43.9	(I)	8.25	77	175	20	20	25
N=	17		17	17	17	17	17	17
Max	85.7		8.50	130	374	80	90	75
Min	13.5		7.30	57	111	20	20	10
Mean	32.0		7.98	102	268	31	50	23

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 05 Mill-Willow Bypass at mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	24.7	7.85	117	276	20	25	54
AUG	1	16.1	8.20	119	346	20	28	31
SEP	1	13.5	8.10	122	370	20	30	26
OCT	1	17.2	7.65	116	344	20	38	15
NOV	1	20.5	8.40	110	297	30	57	13
DEC	1	15.1	8.10	130	374	20	69	11
JAN	1	18.9	7.95	112	307	30	75	10
FEB	1	22.6	8.05	115	310	20	53	10
MAR	2	22.7	8.35	106	303	20	43	12
APR	2	37.5	7.60	90	223	45	71	22
MAY	2	63.8	7.90	69	149	55	63	27
JUN	2	61.1	7.93	70	157	45	49	26
N=		12	12	12	12	12	12	12
Max		63.8	8.40	130	374	55	75	54
Min		13.5	7.60	69	149	20	25	10
Mean		27.8	8.01	106	288	29	50	21
Annual Metals Load (tons/year)						0.96	1.44	0.63

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	33%	0%	0%
Acute Criterion	13%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	1.2 X	0.2 X	0.1 X
Acute Criterion	0.7 X	0.2 X	0.1 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.39	0.00	0.00
ACUTE	0.09	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.39
ACUTE	0.09

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 06 Warm Springs Creek at mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	0.2	(I)	7.45	161	579	10 <	5 <	10
Jul 27	0.1	(I)	7.75	196	473	10 <	5 <	14
Aug 11	0.3	(I)	8.05	150	709	10 <	5 <	11
Sep 14	0.1	(I)	7.95	202	542	10 <	5 <	13
Oct 13	0.2	(I)	7.25	195	584	10 <	5 <	10
Nov 16	3.7	(I)	8.60	150	388	10 <	5 <	5
Dec 15	7.4	(I)	8.10	168	444	10 <	5 <	6
Jan 12	8.0	(E)	7.90	184	580	10 <	6	8
Feb 9	26.9	(I)	8.00	128	278	10	5 <	5
Mar 8	4.6	(I)	8.01	146	397	10 <	5 <	4
Mar 29	21.7	(I)	8.40	143	333	10 <	7	3
Apr 12	29.3	(I)	8.25	136	286	10 <	5 <	4
Apr 20	44.9	(I)	7.70	116	234	10 <	5 <	3
May 2	36.0	(I)	8.00	127	249	10 <	5 <	3
May 17	113.0	(M)	7.65	81	129	100	41	18
May 31	91.2	(E)	7.30	87	148	10	5 <	4
Jun 14	59.4	(I)	7.65	79	144	10 <	5 <	3
N=	17		17	17	17	17	17	17
Max	113.0		8.60	202	709	100	41	18
Min	0.1		7.25	79	129	10 <	5 <	3
Mean	26.3		7.88	144	382	10 <	5 <	7

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 06 Warm Springs Creek at mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	6.8	7.60	179	526	10 <	5 <	12
AUG	1	3.0	8.05	150	709	10 <	5 <	11
SEP	1	3.5	7.95	202	542	10 <	5 <	13
OCT	1	10.6	7.25	195	584	10 <	5 <	10
NOV	1	15.5	8.60	150	388	10 <	5 <	5
DEC	1	14.7	8.10	168	444	10 <	5 <	6
JAN	1	8.4	7.90	184	580	10 <	6	8
FEB	1	15.3	8.00	128	278	10	5 <	5
MAR	2	21.4	8.21	145	365	10 <	5 <	4
APR	2	34.1	7.98	126	260	10 <	5 <	4
MAY	2	70.0	7.83	104	189	50	21	11
JUN	2	58.5	7.48	83	146	10 <	5 <	4
N=		12	12	12	12	12	12	12
Max		70.0	8.60	202	709	50	21	13
Min		3.0	7.25	83	146	10 <	5 <	4
Mean		21.8	7.91	151	418	10 <	5 <	8
Annual Metals Load (tons/year)						0.30	0.12	0.14

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	4%	0%	0%
Acute Criterion	4%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.2 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.01	0.00	0.00
ACUTE	0.01	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.01
ACUTE	0.01

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 07 Clark Fork below Warm Springs Creek

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	53.7	(I)	8.10	97	234	20	39	18
Jul 27	61.8	(I)	8.15	97	253	20	24	36
Aug 11	39.7	(I)	8.70	94	256	10	21	19
Sep 14	42.3	(I)	8.80	91	260	10	18	15
Oct 13	45.8	(I)	7.85	102	291	10	21	9
Nov 16	64.6	(E)	8.65	111	278	10	36	9
Dec 15	55.5	(I)	7.96	126	308	20	54	8
Jan 12	53.0	(E)	7.95	129	354	20	97	9
Feb 9	81.0	(I)	8.10	125	292	20	76	8
Mar 8	75.4	(I)	8.32	110	289	20	64	10
Mar 29	85.5	(I)	8.40	107	281	30	80	8
Apr 12	105.8	(I)	8.10	103	251	20	65	11
Apr 20	186.4	(I)	8.25	86	199	20	53	14
May 2	139.2	(I)	8.80	98	220	20	45	11
May 17	268.0	(E)	7.80	78	147	50	49	18
May 31	273.6	(I)	7.70	78	160	40	41	13
Jun 14	127.4	(I)	7.90	79	168	10	16	11
N=	17		17	17	17	17	17	17
Max	273.6		8.80	129	354	50	97	36
Min	39.7		7.70	78	147	10	16	8
Mean	103.5		8.21	101	249	21	47	13

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 07 Clark Fork below Warm Springs Creek

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	57.8	8.13	97	244	20	32	27
AUG	1	39.7	8.70	94	256	10	21	19
SEP	1	42.3	8.80	91	260	10	18	15
OCT	1	45.8	7.85	102	291	10	21	9
NOV	1	64.6	8.65	111	278	10	36	9
DEC	1	55.5	7.96	126	308	20	54	8
JAN	1	53.0	7.95	129	354	20	97	9
FEB	1	81.0	8.10	125	292	20	76	8
MAR	2	80.5	8.36	109	285	25	72	9
APR	2	146.1	8.18	95	225	20	59	13
MAY	2	203.6	8.30	88	184	35	47	15
JUN	2	200.5	7.80	79	164	25	29	12
N=		12	12	12	12	12	12	12
Max		203.6	8.80	129	354	35	97	27
Min		39.7	7.80	79	164	10	18	8
Mean		89.2	8.23	104	262	19	47	13
Annual Metals Load (tons/year)						1.96	4.14	1.10

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	13%	0%	0%
Acute Criterion	8%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.7 X	0.2 X	0.1 X
Acute Criterion	0.5 X	0.2 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.09	0.00	0.00
ACUTE	0.04	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.09
ACUTE	0.04

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 08 Clark Fork near Dempsey

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	24.7	(I)	7.85	135	274	30	18	17
Jul 27	63.1	(I)	8.05	124	253	10	16	26
Aug 11	29.0	(I)	8.65	122	270	10	8	18
Sep 14	42.9	(I)	8.50	141	312	10	12	17
Oct 13	83.5	(I)	7.75	155	324	10	9	12
Nov 16	121.4	(I)	8.70	141	305	10 <	38	9
Dec 15	133.1	(I)	8.40	167	335	20	30	9
Jan 12			7.95	163	342	20	51	10
Feb 9			8.05	144	298	20	44	10
Mar 8	131.4	(I)	8.08	144	320	20	37	11
Mar 29	148.1	(I)	8.65	140	302	20	48	10
Apr 12	166.8	(I)	8.35	136	297	20	70	12
Apr 20			7.95	117	250	30	60	17
May 2	186.5	(I)	8.60	127	264	20	44	13
May 17			7.75	95	182	80	106	21
May 31			7.40	97	195	40	49	16
Jun 14	102.7	(I)	8.25	94	197	10 <	13	12
N=	12		17	17	17	17	17	17
Max	186.5		8.70	167	342	80	106	26
Min	24.7		7.40	94	182	10 <	8	9
Mean	102.8		8.17	132	278	21	38	14

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 08 Clark Fork near Dempsey

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	43.9	7.95	130	264	20	17	22
AUG	1	29.0	8.65	122	270	10	8	18
SEP	1	42.9	8.50	141	312	10	12	17
OCT	1	83.5	7.75	155	324	10	9	12
NOV	1	121.4	8.70	141	305	10 <	38	9
DEC	1	133.1	8.40	167	335	20	30	9
JAN	1		7.95	163	342	20	51	10
FEB	1		8.05	144	298	20	44	10
MAR	2	139.8	8.37	142	311	20	43	11
APR	2	166.8	8.15	127	274	25	65	15
MAY	2	186.5	8.18	111	223	50	75	17
JUN	2	102.7	7.83	96	196	20	31	14
N=		10	12	12	12	12	12	12
Max		186.5	8.70	167	342	50	75	22
Min		29.0	7.75	96	196	10 <	8	9
Mean		105.0	8.21	136	288	19	35	14
Annual Metals Load (tons/year)						1.94	3.69	1.15

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	17%	0%	0%
Acute Criterion	8%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.7 X	0.1 X	0.1 X
Acute Criterion	0.4 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.11	0.00	0.00
ACUTE	0.03	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.11
ACUTE	0.03

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 09 Clark Fork at Deer Lodge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	78.0	(M)	7.65	167	255	10	12	16
Jul 27	147.0	(M)	7.90	144	250	20	22	22
Aug 11	62.0	(M)	8.20	163	264	10 <	15	13
Sep 14	73.0	(M)	8.25	162	289	10 <	12	13
Oct 13	150.0	(M)	7.80	170	291	10	16	12
Nov 16	179.0	(M)	8.80	154	290	10	26	10
Dec 15	150.0	(E)	8.30	174	307	20	27	8
Jan 12	150.0	(E)	8.00	152	292	40	73	10
Feb 9	190.0	(E)	8.05	141	267	40	61	11
Mar 8	193.0	(M)	8.01	142	271	30	54	12
Mar 29	202.0	(M)	8.70	142	289	30	58	10
Apr 12	214.0	(M)	8.40	144	284	30	55	12
Apr 20	351.0	(M)	7.65	125	248	40	66	18
May 2	287.0	(M)	8.55	134	260	30	48	14
May 17	299.0	(M)	8.35	110	205	40	61	17
May 31	354.0	(M)	7.60	114	204	50	60	17
Jun 14	189.0	(M)	8.65	103	194	10	11	12
N=	17		17	17	17	17	17	17
Max	354.0		8.80	174	307	50	73	22
Min	62.0		7.60	103	194	10 <	11	8
Mean	192.2		8.17	144	262	24	40	13

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 09 Clark Fork at Deer Lodge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	148.0	7.78	156	253	15	17	19
AUG	1	88.5	8.20	163	264	10 <	15	13
SEP	1	96.3	8.25	162	289	10 <	12	13
OCT	1	156.0	7.80	170	291	10	16	12
NOV	1	176.0	8.80	154	290	10	26	10
DEC	1	174.0	8.30	174	307	20	27	8
JAN	1	150.0	8.00	152	292	40	73	10
FEB	1	184.0	8.05	141	267	40	61	11
MAR	2	204.0	8.36	142	280	30	56	11
APR	2	262.0	8.03	135	266	35	61	15
MAY	2	273.0	8.45	122	233	35	55	16
JUN	2	161.0	8.13	109	199	30	36	15
N=		12	12	12	12	12	12	12
Max		273.0	8.80	174	307	40	73	19
Min		88.5	7.78	109	199	10 <	12	8
Mean		172.7	8.18	148	269	22	38	13
Annual Metals Load (tons/year)						4.25	7.09	2.17

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	46%	0%	0%
Acute Criterion	8%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.8 X	0.2 X	0.1 X
Acute Criterion	0.5 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.38	0.00	0.00
ACUTE	0.04	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.38
ACUTE	0.04

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 10 Clark Fork above Little Blackfoot River

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	82.9	(I)	7.90	196	262	20	50	18
Jul 27	148.4	(I)	8.00	157	244	20	22	23
Aug 11	80.0	(E)	8.25	156	229	10	18	15
Sep 14	90.0	(E)	8.40	180	279	20	10	18
Oct 13	166.2	(I)	8.05	168	290	10	12	13
Nov 16	187.7	(I)	8.40	160	284	10	19	11
Dec 15	156.0	(I)	8.35	182	305	10	23	9
Jan 12	150.0	(E)	8.00	159	288	20	47	9
Feb 9	200.0	(E)	8.00	145	264	50	67	11
Mar 8	211.0	(I)	8.12	147	285	30	43	12
Mar 29	215.9	(I)	8.85	147	278	30	55	12
Apr 12	230.6	(I)	8.55	148	284	40	66	14
Apr 20	326.2	(I)	7.60	129	246	80	118	23
May 2	251.8	(I)	8.60	140	262	30	53	14
May 17	294.6	(I)	8.50	120	209	30	45	16
May 31	350.0	(E)	7.40	122	203	80	99	22
Jun 14	164.1	(I)	8.55	149	217	10	13	16
N=	17		17	17	17	17	17	17
Max	350.0		8.85	196	305	80	118	23
Min	80.0		7.40	120	203	10	10	9
Mean	194.4		8.21	153	261	29	45	15

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 10 Clark Fork above Little Blackfoot River

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	115.7	7.95	177	253	20	36	21
AUG	1	80.0	8.25	156	229	10	18	15
SEP	1	90.0	8.40	180	279	20	10	18
OCT	1	166.2	8.05	168	290	10	12	13
NOV	1	187.7	8.40	160	284	10	19	11
DEC	1	156.0	8.35	182	305	10	23	9
JAN	1	150.0	8.00	159	288	20	47	9
FEB	1	200.0	8.00	145	264	50	67	11
MAR	2	213.5	8.49	147	282	30	49	12
APR	2	278.4	8.08	139	265	60	92	19
MAY	2	273.2	8.55	130	236	30	49	15
JUN	2	257.1	7.98	136	210	45	56	19
N=		12	12	12	12	12	12	12
Max		278.4	8.55	182	305	60	92	21
Min		80.0	7.95	130	210	10	10	9
Mean		180.6	8.21	156	265	26	40	14
Annual Metals Load (tons/year)						5.34	8.12	2.54

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	38%	0%	0%
Acute Criterion	17%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	1.0 X	0.2 X	0.1 X
Acute Criterion	0.6 X	0.2 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.37	0.00	0.00
ACUTE	0.10	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.37
ACUTE	0.10

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 11 Clark Fork at Gold Creek Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	172.0	(M)	8.08	174	224	10 <	13	13
Jul 27	283.0	(M)	8.03	150	218	20	42	16
Aug 10	138.0	(M)	8.09	159	227	10	17	14
Sep 15	155.0	(M)	8.05	173	256	10	9	13
Oct 14	263.0	(M)	7.97	179	262	20	29	10
Nov 17	270.0	(E)	7.90	156	260	10	33	9
Dec 16	240.0	(E)	7.99	177	284	10 <	15	9
Jan 13	190.0	(E)	7.75	155	260	10 <	29	6
Feb 10	260.0	(E)	7.78	144	245	30	51	11
Mar 8	282.0	(M)	7.91	144	247	20	36	9
Mar 30	307.0	(M)	7.89	144	242	20	40	9
Apr 13	358.0	(M)	7.83	141	243	20	46	12
Apr 20	550.0	(M)	7.83	118	201	10 <	112	18
May 2	427.0	(M)	7.60	128	205	30	22	11
May 18	767.0	(M)	7.58	99	145	30	45	10
Jun 1	971.0	(M)	7.78	118	168	50	62	16
Jun 15	341.0	(M)	7.80	140	193		17	12
N=	17		17	17	17	16	17	17
Max	971.0		8.09	179	284	50	112	18
Min	138.0		7.58	99	145	10 <	9	6
Mean	351.4		7.87	147	228	17	36	12

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 11 Clark Fork at Gold Creek Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	287.0	8.06	162	221	10	28	15
AUG	1	176.0	8.09	159	227	10	17	14
SEP	1	175.0	8.05	173	256	10	9	13
OCT	1	247.0	7.97	179	262	20	29	10
NOV	1	273.0	7.90	156	260	10	33	9
DEC	1	250.0	7.99	177	284	10 <	15	9
JAN	1	199.0	7.75	155	260	10 <	29	6
FEB	1	262.0	7.78	144	245	30	51	11
MAR	2	306.0	7.90	144	245	20	38	9
APR	2	410.0	7.83	130	222	10	79	15
MAY	2	577.0	7.59	114	175	30	34	11
JUN	1	376.0	7.79	129	181	50	40	14
N=		12	12	12	12	12	12	12
Max		577.0	8.09	179	284	50	79	15
Min		175.0	7.59	114	175	10 <	9	6
Mean		294.8	7.89	152	236	17	33	11
Annual Metals Load (tons/year)						5.56	10.57	3.31

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	25%	0%	0%
Acute Criterion	13%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.7 X	0.2 X	0.1 X
Acute Criterion	0.5 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.18	0.00	0.00
ACUTE	0.06	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.18
ACUTE	0.06

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 12 Clark Fork at Bonita

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	286.0	(M)	8.22	189	287	10	11	12
Jul 27	525.0	(E)	8.15	173	256	20	37	15
Aug 10	208.0	(M)	8.32	175	286	10 <	5 <	12
Sep 15	221.0	(M)	8.12	178	288	10 <	7	10
Oct 14	451.0	(M)	8.07	183	272	20	35	10
Nov 17	476.0	(M)	8.02	166	269	10 <	26	9
Dec 16	390.0	(E)	8.10	186	293	10 <	5	8
Jan 13	410.0	(E)	7.97	162	272	10 <	29	7
Feb 10	449.0	(M)	8.01	152	255	10 <	28	8
Mar 8	480.0	(M)	7.99	153	255	20	39	9
Mar 30	497.0	(M)	7.97	150	246	20	35	8
Apr 13	512.0	(M)	7.95	153	256	20	45	12
Apr 20	703.0	(M)	7.83	123	204	10 <	85	15
May 2	508.0	(M)	8.05	144	235	20	17	11
May 18	843.0	(M)	7.77	120	185	20	42	11
Jun 1	1330.0	(M)	7.82	131	192	60	118	17
Jun 15	506.0	(M)	8.08	164	247		16	13
N=	17		17	17	17	16	17	17
Max	1330.0		8.32	189	293	60	118	17
Min	208.0		7.77	120	185	10 <	5 <	7
Mean	517.4		8.03	159	253	13	34	11

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 12 Clark Fork at Bonita

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	458.0	8.19	181	272	15	24	14
AUG	1	281.0	8.32	175	286	10 <	5 <	12
SEP	1	271.0	8.12	178	288	10 <	7	10
OCT	1	428.0	8.07	183	272	20	35	10
NOV	1	463.0	8.02	166	269	10 <	26	9
DEC	1	436.0	8.10	186	293	10 <	5	8
JAN	1	365.0	7.97	162	272	10 <	29	7
FEB	1	440.0	8.01	152	255	10 <	28	8
MAR	2	490.0	7.98	152	251	20	37	9
APR	2	560.0	7.89	138	230	10	65	14
MAY	2	698.0	7.91	132	210	20	30	11
JUN	1	572.0	7.95	148	220	60	67	15
N=		12	12	12	12	12	12	12
Max		698.0	8.32	186	293	60	67	15
Min		271.0	7.89	132	210	10 <	5 <	7
Mean		455.2	8.04	163	260	12	29	10
Annual Metals Load (tons/year)						6.50	14.57	4.78

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	8%	0%	0%
Acute Criterion	8%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.5 X	0.1 X	0.1 X
Acute Criterion	0.3 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.04	0.00	0.00
ACUTE	0.03	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.04
ACUTE	0.03

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 13 Clark Fork at Turah

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	678.0	(M)	8.17	125	168	20	16	6
Jul 27	868.0	(M)	8.10	136	191	10 <	21	9
Aug 10	411.0	(M)	8.26	125	179	10 <	6	6
Sep 15	398.0	(M)	8.12	133	195	10 <	5	< 5
Oct 14	625.0	(M)	8.06	154	214	10 <	18	7
Nov 17	652.0	(M)	8.01	143	217	10 <	18	6
Dec 16	527.0	(M)	8.06	154	232	10 <	7	6
Jan 13	620.0	(E)	7.95	137	218	10 <	20	5
Feb 10	611.0	(M)	8.05	133	208	10 <	18	6
Mar 8	704.0	(M)	7.97	132	209	10 <	17	6
Mar 30	739.0	(M)	7.99	120	199	10	25	6
Apr 13	901.0	(M)	7.87	119	183	10 <	28	7
Apr 20	1620.0	(M)	7.68	79	118	10	60	7
May 2	1190.0	(M)	7.92	98	140	10 <	5	< 5
May 18	2530.0	(M)	7.66	66	86	10 <	22	4
Jun 1	2620.0	(M)	7.77	87	117	30	63	8
Jun 15	1370.0	(M)	7.89	98	131		9	5
N=	17		17	17	17	16	17	17
Max	2620.0		8.26	154	232	30	63	9
Min	398.0		7.66	66	86	10 <	5	< 4
Mean	1003.8		7.97	120	177	10 <	20	6

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 13 Clark Fork at Turah

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	837.0	8.14	131	180	10	19	8
AUG	1	490.0	8.26	125	179	10 <	6	6
SEP	1	462.0	8.12	133	195	10 <	5 <	5
OCT	1	611.0	8.06	154	214	10 <	18	7
NOV	1	643.0	8.01	143	217	10 <	18	6
DEC	1	599.0	8.06	154	232	10 <	7	6
JAN	1	560.0	7.95	137	218	10 <	20	5
FEB	1	619.0	8.05	133	208	10 <	18	6
MAR	2	716.0	7.98	126	204	10 <	21	6
APR	2	1090.0	7.78	99	151	10 <	44	7
MAY	2	1890.0	7.79	82	113	10 <	11	5
JUN	1	1462.0	7.83	93	124	30	36	7
N=		12	12	12	12	12	12	12
Max		1890.0	8.26	154	232	30	44	8
Min		462.0	7.78	82	113	10 <	5 <	5
Mean		831.6	8.00	126	186	10 <	18	6
Annual Metals Load (tons/year)						4.25	16.65	4.90

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	13%	0%	0%
Acute Criterion	8%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.2 X	0.1 X	0.0 X
Acute Criterion	0.1 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.03	0.00	0.00
ACUTE	0.01	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.03
ACUTE	0.01

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 14 Blackfoot River at USGS station near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	634.0	(M)	8.25	121	128	10 <	5 <	1 <
Jul 27	633.0	(M)	8.17	125	135	10 <	5 <	1
Aug 10	450.0	(M)	8.34	124	135	10 <	5 <	1 <
Sep 15	370.0	(M)	8.18	132	144	10 <	5 <	1 <
Oct 14	376.0	(M)	8.07	144	151	10 <	5 <	1 <
Nov 17	384.0	(M)	8.05	134	147	10 <	5 <	1
Dec 16	330.0	(E)	8.05	146	153	10 <	5 <	1 <
Jan 13	380.0	(E)	7.86	131	146	10 <	5 <	1 <
Feb 10	410.0	(E)	7.95	126	141	10 <	5 <	1 <
Mar 8	400.0	(M)	8.01	124	140	10 <	5 <	1 <
Mar 30	516.0	(M)	7.99	123	135	10 <	5 <	1
Apr 13	770.0	(M)	7.75	102	109	10 <	5 <	1
Apr 20	2440.0	(M)	7.65	66	71	10 <	5 <	1 <
May 2	1450.0	(M)	7.87	80	84	10 <	5 <	1 <
May 18	3510.0	(M)	7.64	71	75	10 <	5 <	1 <
Jun 1	3300.0	(M)	7.83	83	91	10 <	5 <	1 <
Jun 15	1650.0	(M)	7.98	95	104		5 <	1 <
N=	17		17	17	17	16	17	17
Max	3510.0		8.34	146	153	10 <	5 <	1
Min	330.0		7.64	66	71	10 <	5 <	1 <
Mean	1059.0		7.98	113	123	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 14 Blackfoot River at USGS station near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	634.0	8.21	123	132	10 <	5 <	1 <
AUG	1	471.0	8.34	124	135	10 <	5 <	1 <
SEP	1	387.0	8.18	132	144	10 <	5 <	1 <
OCT	1	370.0	8.07	144	151	10 <	5 <	1 <
NOV	1	369.0	8.05	134	147	10 <	5 <	1
DEC	1	332.0	8.05	146	153	10 <	5 <	1 <
JAN	1	348.0	7.86	131	146	10 <	5 <	1 <
FEB	1	367.0	7.95	126	141	10 <	5 <	1 <
MAR	2	435.0	8.00	124	138	10 <	5 <	1 <
APR	2	1231.0	7.70	84	90	10 <	5 <	1 <
MAY	2	2680.0	7.76	76	80	10 <	5 <	1 <
JUN	1	1808.0	7.91	89	98	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		2680.0	8.34	146	153	10 <	5 <	1
Min		332.0	7.70	76	80	10 <	5 <	1 <
Mean		786.0	8.01	119	129	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	0.00	0.03

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 15 Clark Fork below Milltown Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1280.0	(M)	8.34	120	147	10 <	7	4
Jul 27	1480.0	(M)	8.11	130	165	10 <	11	6
Aug 10	892.0	(M)	8.15	123	158	10 <	7	4
Sep 15	916.0	(M)	8.24	126	165	10 <	5 <	4
Oct 14	1040.0	(M)	8.12	148	192	10 <	17	2
Nov 17	1060.0	(M)	8.07	137	188	10 <	11	4
Dec 16	921.0	(M)	8.10	148	198	10 <	5	4
Jan 13	930.0	(E)	7.91	134	181	10 <	10	4
Feb 10	998.0	(M)	8.12	128	181	10 <	5 <	4
Mar 8	1140.0	(M)	8.07	124	178	10 <	9	4
Mar 30	1250.0	(M)	8.02	123	166	10 <	9	4
Apr 13	1590.0	(M)	7.99	112	149	10 <	5 <	5
Apr 20	3940.0	(M)	7.60	71	90	10 <	5	2
May 2	2590.0	(M)	7.80	86	110	10 <	5 <	2
May 18	6000.0	(M)	7.59	68	80	10 <	12	2
Jun 1	5870.0	(M)	7.75	84	101	10 <	14	3
Jun 15	2950.0	(M)	7.86	97	117		5	2
N=	17		17	17	17	16	17	17
Max	6000.0		8.34	148	198	10 <	17	6
Min	892.0		7.59	68	80	10 <	5 <	2
Mean	2049.8		7.99	115	151	10 <	7	4

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 15 Clark Fork below Milltown Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	1434.0	8.23	125	156	10 <	9	5
AUG	1	963.0	8.15	123	158	10 <	7	4
SEP	1	858.0	8.24	126	165	10 <	5 <	4
OCT	1	991.0	8.12	148	192	10 <	17	2
NOV	1	1030.0	8.07	137	188	10 <	11	4
DEC	1	982.0	8.10	148	198	10 <	5	4
JAN	1	895.0	7.91	981	181	10 <	10	4
FEB	1	981.0	8.12	128	181	10 <	5 <	4
MAR	2	1149.0	8.05	124	172	10 <	9	4
APR	2	2268.0	7.80	92	120	10 <	5 <	4
MAY	2	4480.0	7.70	77	95	10 <	6	2
JUN	1	3229.0	7.81	91	109	10 <	10	3
N=		12	12	12	12	12	12	12
Max		4480.0	8.24	981	198	10 <	17	5
Min		858.0	7.70	77	95	10 <	5 <	2
Mean		1605.0	8.02	192	160	10 <	7	4
Annual Metals Load (tons/year)						0.00	10.71	5.05

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 16 Clark Fork above Missoula WWTP

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1280.0	(E)	8.39	117	141	20	6	4
Jul 27	1480.0	(E)	8.27	126	163	10 <	9	6
Aug 11	892.0	(E)	8.06	122	155	10 <	5	4
Sep 15	916.0	(E)	8.30	127	162	10 <	5 <	4
Oct 14	1040.0	(E)	8.17	147	186	10 <	29	4
Nov 17	1060.0	(E)	8.05	135	186	10 <	9	4
Dec 16	921.0	(E)	8.12	147	189	10 <	5 <	4
Jan 13	930.0	(E)	7.91	131	181	10 <	26	4
Feb 10	998.0	(E)	8.12	124	170	10 <	17	4
Mar 8	1140.0	(E)	8.20	123	175	10 <	8	4
Mar 30	1250.0	(E)	7.85	119	162	10 <	11	3
Apr 13	1590.0	(E)	8.10	106	137	10 <	6	4
Apr 20	3940.0	(E)	7.53	65	84	10 <	5 <	1
May 2	2590.0	(E)	7.95	81	105	10 <	5 <	2
May 18	6000.0	(E)	7.51	64	73	10 <	14	2
Jun 1	5870.0	(E)	7.75	79	97	10	14	3
Jun 15	2950.0	(E)	8.02	93	112		10	1
N=	17		17	17	17	16	17	17
Max	6000.0		8.39	147	189	20	29	6
Min	892.0		7.51	64	73	10 <	5 <	1
Mean	2049.8		8.02	112	146	10 <	10	3

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 16 Clark Fork above Missoula WWTP

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	1434.0	8.33	122	152	10	8	5
AUG	1	963.0	8.06	122	155	10 <	5	4
SEP	1	858.0	8.30	127	162	10 <	5 <	4
OCT	1	991.0	8.17	147	186	10 <	29	4
NOV	1	1030.0	8.05	135	186	10 <	9	4
DEC	1	982.0	8.12	147	189	10 <	5 <	4
JAN	1	895.0	7.91	131	181	10 <	26	4
FEB	1	981.0	8.12	124	170	10 <	17	4
MAR	2	1149.0	8.03	121	169	10 <	10	4
APR	2	2268.0	7.82	86	111	10 <	5 <	3
MAY	2	4480.0	7.73	73	89	10 <	7	2
JUN	1	3229.0	7.89	86	105	10	12	2
N=		12	12	12	12	12	12	12
Max		4480.0	8.33	147	189	10	29	5
Min		858.0	7.73	73	89	10 <	5 <	2
Mean		1605.0	8.04	118	154	10 <	10	4
Annual Metals Load (tons/year)						3.81	14.32	4.85

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	4%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.1 X	0.1 X	0.0 X
Acute Criterion	0.1 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 17 Missoula WWTP discharge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	13.6	(I)	7.18	172	164	10 <	44	1
Jul 27	14.2	(I)	7.43	188	173	10 <	52	1
Aug 11	10.2	(I)	7.51	201	171	10 <	47	1
Sep 15	13.1	(I)	7.22	230	173	10 <	37	2
Oct 14	12.7	(I)	7.42	213	179	20	50	1
Nov 17	11.1	(I)	7.28	131	175	10	58	2
Dec 16	11.4	(I)	7.47	130	173	20	46	2
Jan 13	9.4	(M)	7.25	194	176	10	65	2
Feb 10	12.4	(I)	7.08	136	163	10 <	51	2
Mar 8	13.7	(I)	7.20	171	178	10 <	44	1
Mar 30	13.5	(I)	7.30	187	166	10 <	55	2
Apr 13	13.8	(I)	7.12	229	172	10 <	59	1
Apr 20	13.9	(I)	7.09	213	173	10 <	40	1 <
May 2	12.5	(I)	6.96	115	167	30	29	1 <
May 18	14.2	(I)	7.17	222	165	10 <	49	1 <
Jun 1	14.5	(I)	6.95	142	162	10 <	38	1 <
Jun 15	14.9	(I)	7.17	174	167		49	1 <
N=	17		17	17	17	16	17	17
Max	14.9		7.51	230	179	30	65	2
Min	9.4		6.95	115	162	10 <	29	1 <
Mean	12.9		7.22	179	170	10 <	48	1

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 17 Missoula WWTP discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	11.3	7.31	180	169	10 <	48	1
AUG	1	11.0	7.51	201	171	10 <	47	1
SEP	1	9.6	7.22	230	173	10 <	37	2
OCT	1	8.7	7.42	213	179	20	50	1
NOV	1	9.3	7.28	131	175	10	58	2
DEC	1	8.7	7.47	130	173	20	46	2
JAN	1	9.3	7.25	194	176	10	65	2
FEB	1	10.0	7.08	136	163	10 <	51	2
MAR	2	10.6	7.25	179	172	10 <	50	2
APR	2	11.3	7.11	221	173	10 <	50	1 <
MAY	2	10.8	7.07	169	166	15	39	1 <
JUN	1	12.2	7.06	158	165	10 <	44	1 <
N=		12	12	12	12	12	12	12
Max		12.2	7.51	230	179	20	65	2
Min		8.7	7.06	130	163	10 <	37	1 <
Mean		10.2	7.25	178	171	10 <	49	1
Annual Metals Load (tons/year)						0.06	0.49	0.01

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	21%	0%	0%
Acute Criterion	4%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.3 X	0.3 X	0.0 X
Acute Criterion	0.2 X	0.3 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.07	0.00	0.00
ACUTE	0.01	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.07
ACUTE	0.01

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 18 Clark Fork at Shuffield's

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1280.0	(E)	8.32	118	143	10 <	6	4
Jul 27	1480.0	(E)	8.28	126	163	10 <	8	6
Aug 11	892.0	(E)	8.13	122	154	10 <	7	3
Sep 5	916.0	(E)	8.33	127	162	10 <	5 <	4
Oct 14	1040.0	(E)	8.24	145	186	10 <	5	4
Nov 17	1060.0	(E)	8.13	135	187	10 <	11	4
Dec 16	921.0	(E)	8.09	145	187	10 <	5 <	4
Jan 13	930.0	(E)	7.95	140	181	10 <	25	4
Feb 10	998.0	(E)	8.01	125	171	10 <	17	4
Mar 8	1140.0	(E)	8.13	123	171	10 <	8	4
Mar 30	1250.0	(E)	8.10	120	163	10 <	11	4
Apr 13	1590.0	(E)	8.12	108	136	10 <	16	3
Apr 20	3940.0	(E)	7.64	66	85	10 <	8	1
May 2	2590.0	(E)	7.91	84	106	10 <	5 <	1
May 18	6000.0	(E)	7.56	65	75	10 <	14	2
Jun 1	5870.0	(E)	7.49	82	99	10 <	14	2
Jun 15	2950.0	(E)	7.91	93	113		5 <	1
N=	17		17	17	17	16	17	17
Max	6000.0		8.33	145	187	10 <	25	6
Min	892.0		7.49	65	75	10 <	5 <	1
Mean	2049.8		8.02	113	146	10 <	9	3

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 18 Clark Fork at Shuffield's

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	1434.0	8.30	122	153	10 <	7	5
AUG	1	963.0	8.13	122	154	10 <	7	3
SEP	1	858.0	8.33	127	162	10 <	5 <	4
OCT	1	991.0	8.24	145	186	10 <	5	4
NOV	1	1030.0	8.13	135	187	10 <	11	4
DEC	1	982.0	8.09	145	187	10 <	5 <	4
JAN	1	895.0	7.95	140	181	10 <	25	4
FEB	1	981.0	8.01	125	171	10 <	17	4
MAR	2	1149.0	8.12	122	167	10 <	10	4
APR	2	2268.0	7.88	87	111	10 <	12	2
MAY	2	4480.0	7.74	75	91	10 <	7	2
JUN	1	3229.0	7.70	88	106	10 <	7	2
N=		12	12	12	12	12	12	12
Max		4480.0	8.33	145	187	10 <	25	5
Min		858.0	7.70	75	91	10 <	5 <	2
Mean		1605.0	8.05	119	155	10 <	9	3
Annual Metals Load (tons/year)						0.00	13.42	4.41

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.1 X	0.0 X
Acute Criterion	0.0 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 19 Bitterroot River near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	560.0	(E)	8.15	91	90	10 <	5 <	1 <
Jul 27	860.0	(E)	8.13	85	81	10 <	5 <	1 <
Aug 11	368.0	(E)	7.95	100	97	10 <	5 <	1 <
Sep 15	374.0	(E)	8.18	100	99	10 <	5 <	1 <
Oct 14	540.0	(E)	8.18	97	88	10 <	5 <	1 <
Nov 17	480.0	(E)	8.15	86	84	10 <	9	1 <
Dec 16	259.0	(E)	7.99	92	83	10 <	5 <	1 <
Jan 13	520.0	(E)	7.64	81	79	10 <	5	1 <
Feb 10	652.0	(E)	7.77	75	72	10 <	5 <	1 <
Mar 8	710.0	(E)	7.48	69	67	10 <	5 <	1 <
Mar 30	880.0	(E)	7.83	62	57	10 <	5 <	1 <
Apr 13	1410.0	(E)	7.82	50	43	10 <	5 <	1 <
Apr 20	5470.0	(E)	7.47	20	20	10 <	5 <	1 <
May 2	2790.0	(E)	7.62	33	31	10 <	5 <	1 <
May 18	6900.0	(E)	7.42	18	15	10 <	5 <	1 <
Jun 1	6530.0	(E)	7.44	31	29	10 <	5 <	1 <
Jun 15	4390.0	(E)	7.49	32	27		5 <	1 <
N=	17		17	17	17	16	17	17
Max	6900.0		8.18	100	99	10 <	9	1 <
Min	259.0		7.42	18	15	10 <	5 <	1 <
Mean	1981.9		7.81	66	62	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 19 Bitterroot River near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	673.0	8.14	88	86	10 <	5 <	1 <
AUG	1	510.0	7.95	100	97	10 <	5 <	1 <
SEP	1	420.0	8.18	100	99	10 <	5 <	1 <
OCT	1	564.0	8.18	97	88	10 <	5 <	1 <
NOV	1	513.0	8.15	86	84	10 <	9	1 <
DEC	1	432.0	7.99	92	83	10 <	5 <	1 <
JAN	1	461.0	7.64	81	79	10 <	5	1 <
FEB	1	560.0	7.77	75	72	10 <	5 <	1 <
MAR	2	689.0	7.66	66	62	10 <	5 <	1 <
APR	2	2637.0	7.65	35	32	10 <	5 <	1 <
MAY	2	4942.0	7.52	26	23	10 <	5 <	1 <
JUN	1	5043.0	7.47	32	28	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		5043.0	8.18	100	99	10 <	9	1 <
Min		420.0	7.47	26	23	10 <	5 <	1 <
Mean		1453.7	7.86	73	69	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	0.57	0.00

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 20 Clark Fork at Harper Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1840.0	(M)	8.03	110	128	10 <	10	2
Jul 27	2340.0	(M)	8.26	112	133	10 <	5	3
Aug 11	1260.0	(M)	8.18	117	136	10 <	5	2
Sep 15	1290.0	(M)	8.23	119	142	10 <	5	2
Oct 14	1580.0	(M)	8.83	126	147	10 <	5 <	2
Nov 18	1540.0	(M)	7.91	119	153	10 <	10	3
Dec 16	1180.0	(M)	8.04	124	144	10 <	5 <	2
Jan 13	1450.0	(M)		115	145	10 <	8	2
Feb 10	1650.0	(M)	7.92	108	134	10 <	5 <	2
Mar 8	1850.0	(M)	7.99	105	133	10 <	9	2
Mar 30	2130.0	(M)	8.05	100	125	10 <	8	2
Apr 13	3000.0	(M)	8.00	86	103	10 <	7	2
Apr 20	9410.0	(M)	7.45	47	58	10 <	5	1 <
May 2	5380.0	(M)	8.06	64	78	10 <	5 <	1 <
May 18	12900.0	(M)	7.42	47	53	10 <	12	1 <
Jun 1	12400.0	(M)	7.60	62	73	10 <	8	1 <
Jun 15	7340.0	(M)	7.76	64	72		5 <	1 <
N=	17		16	17	17	16	17	17
Max	12900.0		8.83	126	153	10 <	12	3
Min	1180.0		7.42	47	53	10 <	5 <	1 <
Mean	4031.8		7.98	96	115	10 <	5	2

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 20 Clark Fork at Harper Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	2107.0	8.15	111	131	10 <	8	3
AUG	1	1473.0	8.18	117	136	10 <	5	2
SEP	1	1278.0	8.23	119	142	10 <	5	2
OCT	1	1555.0	8.83	126	147	10 <	5 <	2
NOV	1	1543.0	7.91	119	153	10 <	10	3
DEC	1	1414.0	8.04	124	144	10 <	5 <	2
JAN	1	1356.0		115	145	10 <	8	2
FEB	1	1541.0	7.92	108	134	10 <	5 <	2
MAR	2	1838.0	8.02	103	129	10 <	9	2
APR	2	4905.0	7.73	67	81	10 <	6	1
MAY	2	9422.0	7.74	56	66	10 <	6	1 <
JUN	1	8272.0	7.68	63	73	10 <	5 <	1 <
N=		12	11	12	12	12	12	12
Max		9422.0	8.83	126	153	10 <	10	3
Min		1278.0	7.68	56	66	10 <	5 <	1 <
Mean		3058.7	8.04	102	123	10 <	5 <	2
Annual Metals Load (tons/year)						0.00	13.01	2.93

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 21 Stone Container Corporation discharge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)		TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	0.0	(I)							
Jul 27	0.0	(I)							
Aug 11	0.0	(I)							
Sep 15	0.0	(I)							
Oct 14	0.0	(I)							
Nov 18	0.0	(I)							
Dec 16	0.0	(I)							
Jan 13	0.0	(I)							
Feb 11	0.0	(I)							
Mar 8	0.0	(I)							
Mar 30	1.0	(I)	7.76	546	153	10	<	31	4
Apr 13	0.8	(I)	7.70	415	152	10	<	30	3
Apr 20	39.1	(I)	7.72	510	159	10	<	18	7
May 2	14.5	(I)	7.86	585	159	10	<	8	15
May 18	40.8	(I)	7.86	668	135	10	<	25	4
Jun 1	46.9	(I)	7.79	633	126	10	<	22	4
Jun 15	25.1	(I)	7.88	643	123			21	6
N=	17		7	7	7	6		7	7
Max	46.9		7.88	668	159	10	<	31	15
Min	0.0		7.70	415	123	10	<	8	3
Mean	9.9		7.80	571	144	10	<	22	6

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 21 Stone Container Corporation discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	0	0.0						
AUG	0	0.0						
SEP	0	0.0						
OCT	0	0.0						
NOV	0	0.0						
DEC	0	0.0						
JAN	0	0.0						
FEB	0	0.0						
MAR	1	0.3	7.76	546	153	10 <	31	4
APR	2	13.6	7.71	463	156	10 <	24	5
MAY	2	32.5	7.86	627	147	10 <	17	10
JUN	1	20.6	7.84	638	125	10 <	22	5
N=		12	4	4	4	4	4	4
Max		32.5	7.86	638	156	10 <	31	10
Min		0.0	7.71	463	125	10 <	17	4
Mean		5.6	7.79	568	145	10 <	23	6
Annual Metals Load (tons/year)						0.00	0.11	0.04

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.2 X	0.0 X
Acute Criterion	0.0 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 22 Clark Fork at Huson

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1840.0	(E)	8.14	114	132	10 <	5 <	3
Jul 27	2340.0	(E)	8.26	115	135	10 <	5 <	3
Aug 11	1260.0	(E)	8.28	120	138	10 <	5 <	2
Sep 15	1290.0	(E)	8.27	124	142	10 <	5 <	2
Oct 14	1580.0	(E)	8.44	133	150	10 <	5 <	2
Nov 18	1540.0	(E)	7.89	125	154	10 <	7	3
Dec 17	1180.0	(E)	7.93	132	151	10 <	5 <	3
Jan 14	1450.0	(E)	7.73	123	146	10 <	9	3
Feb 11	1650.0	(E)		113	136	10 <	7	2
Mar 8	1850.0	(E)	8.01	110	137	10 <	6	2
Mar 30	2130.0	(E)	7.92	103	127	10 <	12	2
Apr 13	3000.0	(E)	8.16	90	104	10 <	8	3
Apr 20	9410.0	(E)	7.52	42	51	10 <	5 <	1 <
May 2	5380.0	(E)	7.98	64	75	10 <	5 <	1
May 18	12900.0	(E)	7.41	43	47	10 <	11	1 <
Jun 1	12400.0	(E)	7.48	59	66	10 <	13	1 <
Jun 15	7340.0	(E)	7.83	64	70		5 <	1 <
N=	17		16	17	17	16	17	17
Max	12900.0		8.44	133	154	10 <	13	3
Min	1180.0		7.41	42	47	10 <	5 <	1 <
Mean	4031.8		7.95	98	115	10 <	5 <	2

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 22 Clark Fork at Huson

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	2107.0	8.20	115	134	10 <	5 <	3
AUG	1	1473.0	8.28	120	138	10 <	5 <	2
SEP	1	1278.0	8.27	124	142	10 <	5 <	2
OCT	1	1555.0	8.44	133	150	10 <	5 <	2
NOV	1	1543.0	7.89	125	154	10 <	7	3
DEC	1	1414.0	7.93	132	151	10 <	5 <	3
JAN	1	1356.0	7.73	123	146	10 <	9	3
FEB	1	1541.0		113	136	10 <	7	2
MAR	2	1838.0	7.97	107	132	10 <	9	2
APR	2	4905.0	7.84	66	78	10 <	5 <	2
MAY	2	9422.0	7.70	54	61	10 <	6	1 <
JUN	1	8272.0	7.66	62	68	10 <	7	1 <
N=	12	11		12	12	12	12	12
Max		9422.0	8.44	133	154	10 <	9	3
Min		1278.0	7.66	54	61	10 <	5 <	1 <
Mean		3058.7	7.99	106	124	10 <	5 <	2
Annual Metals Load (tons/year)						0.00	12.77	3.44

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 23 Clark Fork near Alberton

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	1840.0	(E)	8.24	112	126	10 <	7	2
Jul 27	2340.0	(E)	8.28	112	133	10 <	5 <	3
Aug 11	1260.0	(E)	8.28	120	134	10 <	5	2
Sep 15	1290.0	(E)	8.38	119	139	10 <	5 <	2
Oct 14	1580.0	(E)	8.29	129	148	10 <	5 <	2
Nov 18	1540.0	(E)	8.00	123	154	10 <	8	3
Dec 17	1180.0	(E)	8.04	126	145	10 <	5 <	3
Jan 14	1450.0	(E)	7.68	121	145	10 <	7	2
Feb 11	1650.0	(E)	7.79	112	135	10 <	5 <	2
Mar 9	1850.0	(E)	8.00	108	137	10 <	5 <	2
Mar 30	2130.0	(E)	8.03	101	124	10 <	5 <	2
Apr 13	3000.0	(E)	8.21	90	103	10 <	6	3
Apr 20	9410.0	(E)	7.37	42	51	10 <	6	1 <
May 2	5380.0	(E)	7.83	63	73	10 <	5 <	1
May 18	12900.0	(E)	7.32	43	46	10 <	14	1 <
Jun 1	12400.0	(E)	7.47	58	64	10 <	7	1 <
Jun 15	7340.0	(E)	7.71	63	66		5 <	1 <
N=	17		17	17	17	16	17	17
Max	12900.0		8.38	129	154	10 <	14	3
Min	1180.0		7.32	42	46	10 <	5 <	1 <
Mean	4031.8		7.94	97	113	10 <	5 <	2

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 23 Clark Fork near Alberton

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	2107.0	8.26	112	130	10 <	5 <	3
AUG	1	1473.0	8.28	120	134	10 <	5	2
SEP	1	1278.0	8.38	119	139	10 <	5 <	2
OCT	1	1555.0	8.29	129	148	10 <	5 <	2
NOV	1	1543.0	8.00	123	154	10 <	8	3
DEC	1	1414.0	8.04	126	145	10 <	5 <	3
JAN	1	1356.0	7.68	121	145	10 <	7	2
FEB	1	1541.0	7.79	112	135	10 <	5 <	2
MAR	2	1838.0	8.02	105	131	10 <	5 <	2
APR	2	4905.0	7.79	66	77	10 <	6	2
MAY	2	9422.0	7.58	53	60	10 <	7	1 <
JUN	1	8272.0	7.59	61	65	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		9422.0	8.38	129	154	10 <	8	3
Min		1278.0	7.58	53	60	10 <	5 <	1 <
Mean		3058.7	7.97	104	122	10 <	5 <	2
Annual Metals Load (tons/year)						0.00	10.30	3.24

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 24 Clark Fork at Superior

Instantaneous Values

Date	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7		8.41	106	120	10 <	5 <	2
Jul 27		8.38	109	126	10 <	5 <	3
Aug 12		8.30	117	131	10 <	5 <	2
Sep 15		8.48	116	136	10 <	5 <	2
Oct 15		8.05	130	146	10 <	5 <	2
Nov 18		8.04	123	150	10 <	7	3
Dec 17		8.03	123	139	10 <	5 <	2
Jan 14		7.79	116	140	10 <	5	2
Feb 11		7.90	114	138	10 <	5 <	2
Mar 9		8.00	106	131	10 <	5 <	2
Mar 31		7.85	100	119	10 <	6	2
Apr 13		8.41	92	104	10 <	7	2
Apr 20		7.60	44	52	10 <	6	1 <
May 2		8.05	66	75	10 <	5 <	1 <
May 18		7.46	46	49	10 <	6	1 <
Jun 1		7.57	56	61	10 <	5 <	1 <
Jun 15		7.74	65	67		5 <	1 <
N=	0	17	17	17	16	17	17
Max		8.48	130	150	10 <	7	3
Min		7.46	44	49	10 <	5 <	1 <
Mean		8.00	96	111	10 <	5 <	2

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 24 Clark Fork at Superior

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2		8.40	108	123	10 <	5 <	3
AUG	1		8.30	117	131	10 <	5 <	2
SEP	1		8.48	116	136	10 <	5 <	2
OCT	1		8.05	130	146	10 <	5 <	2
NOV	1		8.04	123	150	10 <	7	3
DEC	1		8.03	123	139	10 <	5 <	2
JAN	1		7.79	116	140	10 <	5	2
FEB	1		7.90	114	138	10 <	5 <	2
MAR	2		7.93	103	125	10 <	5 <	2
APR	2		8.01	68	78	10 <	7	1
MAY	2		7.76	56	62	10 <	5 <	1 <
JUN	1		7.66	61	64	10 <	5 <	1 <
N=		0	12	12	12	12	12	12
Max			8.48	130	150	10 <	7	3
Min			7.66	56	62	10 <	5 <	1 <
Mean			8.03	103	119	10 <	5 <	2

Annual Metals Load (tons/year)

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 25 Clark Fork above Flathead River

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	2690.0	(M)	8.36	102	114	10 <	5 <	2
Jul 27	3200.0	(M)	8.40	105	120	10 <	5 <	3
Aug 12	1820.0	(M)	8.35	113	123	10 <	5	2
Sep 15	1700.0	(M)	8.32	113	130	10 <	5 <	2
Oct 15	2050.0	(M)	8.11	126	140	10 <	5 <	2
Nov 18	2080.0	(M)	8.03	119	145	10 <	6	2
Dec 17	1740.0	(M)	8.05	117	134	10 <	5 <	2
Jan 14	2040.0	(M)	7.84	115	138	10 <	5 <	2
Feb 11	2130.0	(M)	7.95	108	130	10 <	5 <	2
Mar 9	2440.0	(M)	8.01	104	129	10 <	5 <	2
Mar 31	3140.0	(M)	7.89	93	110	10 <	5 <	2
Apr 13	4570.0	(M)	8.19	84	93	10 <	5	2
Apr 20	13800.0	(M)	7.50	40	48	10 <	5 <	1 <
May 2	7970.0	(M)	7.91	62	71	10 <	5 <	1 <
May 18	16300.0	(M)	7.56	48	51	10 <	10	1
Jun 2	14800.0	(M)	7.55	57	62	10 <	5 <	1 <
Jun 16	9230.0	(M)	7.75	64	68		5 <	1 <
N=	17		17	17	17	16	17	17
Max	16300.0		8.40	126	145	10 <	10	3
Min	1700.0		7.50	40	48	10 <	5 <	1 <
Mean	5394.1		7.99	92	106	10 <	5 <	2

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 25 Clark Fork above Flathead River

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	2895.0	8.38	104	117	10 <	5 <	3
AUG	1	2038.0	8.35	113	123	10 <	5	2
SEP	1	1782.0	8.32	113	130	10 <	5 <	2
OCT	1	2032.0	8.11	126	140	10 <	5 <	2
NOV	1	2027.0	8.03	119	145	10 <	6	2
DEC	1	1910.0	8.05	117	134	10 <	5 <	2
JAN	1	1851.0	7.84	115	138	10 <	5 <	2
FEB	1	2023.0	7.95	108	130	10 <	5 <	2
MAR	2	2565.0	7.95	99	120	10 <	5 <	2
APR	2	7178.0	7.85	62	71	10 <	5 <	1
MAY	2	12320.0	7.74	55	61	10 <	5	1 <
JUN	1	10520.0	7.65	61	65	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		12320.0	8.38	126	145	10 <	6	3
Min		1782.0	7.65	55	61	10 <	5 <	1 <
Mean		4095.1	8.02	99	114	10 <	5 <	2
Annual Metals Load (tons/year)						0.00	6.98	3.84

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 26 Flathead River near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	6110.0	(M)	8.03	64	67	10 <	5 <	1 <
Jul 27	10300.0	(M)	8.41	82	87	10 <	6	1 <
Aug 12	5190.0	(M)	8.12	84	90	10 <	5 <	1 <
Sep 15	11500.0	(M)	8.36	81	90	10 <	5 <	1 <
Oct 15	10900.0	(M)	7.96	91	93	10 <	5 <	1 <
Nov 18	10300.0	(M)	8.00	83	93	10 <	5 <	1 <
Dec 17	12400.0	(M)	7.96	88	91	10 <	5 <	1 <
Jan 14	6600.0	(E)	7.81	89	95	10 <	5 <	1 <
Feb 11	5820.0	(M)	7.77	76	95	10 <	5 <	1 <
Mar 9	11900.0	(M)	7.90	84	91	10 <	5 <	1 <
Mar 31	12500.0	(M)	7.82	84	91	10 <	5 <	1 <
Apr 13	11900.0	(M)	8.05	88	90	10 <	5 <	1 <
Apr 20	10700.0	(M)	7.82	83	90	10 <	5 <	1 <
May 3	12600.0	(M)	7.92	83	94	10 <	5 <	1 <
May 19	7360.0	(M)	7.64	78	81	10 <	5 <	1 <
Jun 2	4400.0	(M)	8.24	79	85	10 <	5 <	1 <
Jun 16	6820.0	(M)	8.18	84	89		5 <	1 <
N=	17		17	17	17	16	17	17
Max	12600.0		8.41	91	95	10 <	6	1 <
Min	4400.0		7.64	64	67	10 <	5 <	1 <
Mean	9252.9		8.00	82	89	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 26 Flathead River near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	6943.0	8.22	73	77	10 <	5 <	1 <
AUG	1	7921.0	8.12	84	90	10 <	5 <	1 <
SEP	1	11410.0	8.36	81	90	10 <	5 <	1 <
OCT	1	10870.0	7.96	91	93	10 <	5 <	1 <
NOV	1	9600.0	8.00	83	93	10 <	5 <	1 <
DEC	1	9855.0	7.96	88	91	10 <	5 <	1 <
JAN	1	6103.0	7.81	89	95	10 <	5 <	1 <
FEB	1	9466.0	7.77	76	95	10 <	5 <	1 <
MAR	2	12690.0	7.86	84	91	10 <	5 <	1 <
APR	2	11870.0	7.94	86	90	10 <	5 <	1 <
MAY	2	9352.0	7.78	81	88	10 <	5 <	1 <
JUN	1	10220.0	8.21	82	87	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		12690.0	8.36	91	95	10 <	5 <	1 <
Min		6103.0	7.77	73	77	10 <	5 <	1 <
Mean		9691.7	8.00	83	90	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	0.00	0.00

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	8800.0	(M)	8.27	91	104	10 <	7	1 <
Jul 27	13600.0	(M)	8.20	90	97	10 <	5 <	1
Aug 13	7260.0	(M)	8.12	93	102	10 <	5 <	1 <
Sep 15	13600.0	(m)	8.25	86	98	10 <	5 <	1 <
Oct 15	12900.0	(M)	8.03	96	100	10 <	5 <	1 <
Nov 18	12700.0	(M)	7.98	90	100	10 <	17	1 <
Dec 17	14300.0	(M)	7.91	91	96	10 <	5 <	1 <
Jan 14	8710.0	(M)						
Feb 11	7970.0	(M)	7.88	92	105	10 <	5 <	1 <
Mar 9	14500.0	(M)	7.94	88	97	10 <	5 <	1 <
Mar 31	16200.0	(M)	7.89	86	95	10 <	5 <	1 <
Apr 13	16600.0	(M)	8.11	87	93	10 <	5 <	1 <
Apr 20	25300.0	(M)	7.72	60	68	10 <	5 <	1 <
May 3	21100.0	(M)	7.86	76	86	10 <	5 <	1 <
May 18	26600.0	(M)	7.73	67	70	10 <	5 <	1 <
Jun 2	19900.0	(M)	7.77	61	66	10 <	6	1 <
Jun 16	15400.0	(M)	7.91	74	75		5 <	1 <
N=	17		16	16	16	15	16	16
Max	26600.0		8.27	96	105	10 <	17	1
Min	7260.0		7.72	60	66	10 <	5 <	1 <
Mean	15025.9		7.97	83	91	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGHAN

Station: 27 Clark Fork above Thompson Falls Reservoir

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	9715.0	8.24	91	101	10 <	5 <	1 <
AUG	1	9813.0	8.12	93	102	10 <	5 <	1 <
SEP	1	13300.0	8.25	86	98	10 <	5 <	1 <
OCT	1	12890.0	8.03	96	100	10 <	5 <	1 <
NOV	1	11580.0	7.98	90	100	10 <	17	1 <
DEC	1	11760.0	7.91	91	96	10 <	5 <	1 <
JAN	0	7959.0						
FEB	1	11510.0	7.88	92	105	10 <	5 <	1 <
MAR	2	15590.0	7.92	87	96	10 <	5 <	1 <
APR	2	19510.0	7.92	74	81	10 <	5 <	1 <
MAY	2	22190.0	7.80	72	78	10 <	5 <	1 <
JUN	1	21210.0	7.84	68	71	10 <	5 <	1 <
N=		12	11	11	11	11	11	11
Max		22190.0	8.25	96	105	10 <	17	1 <
Min		7959.0	7.80	68	71	10 <	5 <	1 <
Mean		13918.9	7.99	85	93	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	15.92	0.00

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 28 Clark Fork below Thompson Falls Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 7	9268.0	(M)	8.20	91	99	10 <	5 <	1 <
Jul 27	13470.0	(M)	8.17	90	98	10 <	5 <	1
Aug 13	7577.0	(M)	8.12	91	100	10 <	5 <	1 <
Sep 15	14589.0	(M)	8.10	86	97	10 <	5 <	1 <
Oct 15	14085.0	(M)	8.04	96	100	10 <	5 <	1 <
Nov 18	13069.0	(M)	7.99	89	102	10 <	5	1 <
Dec 17	14529.0	(M)	7.91	93	96	10 <	5 <	1 <
Jan 14	9522.0	(M)	7.82	94	103	10 <	5 <	1 <
Feb 11	8814.0	(M)	7.95	94	105	10 <	5 <	1 <
Mar 9	14903.0	(M)	7.97	88	97	10 <	5 <	1 <
Mar 31	16234.0	(M)	7.88	85	93	10 <	5 <	1
Apr 13	17493.0	(M)	7.83	87	90	10 <	5 <	1 <
Apr 20	24655.0	(M)	7.65	55	62	10 <	5 <	1 <
May 3	21570.0	(M)	7.85	74	83	10 <	5 <	1 <
May 18	26441.0	(M)	7.64	66	68	10 <	5 <	1 <
Jun 2	20366.0	(M)	7.62	57	60	10 <	5 <	1 <
Jun 16	15348.0	(M)	7.87	72	74		5 <	1 <
N=	17		17	17	17	16	17	17
Max	26441.0		8.20	96	105	10 <	5	1
Min	7577.0		7.62	55	60	10 <	5 <	1 <
Mean	15407.8		7.92	83	90	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 28 Clark Fork below Thompson Falls Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	10170.0	8.19	91	99	10 <	5 <	1 <
AUG	1	10274.0	8.12	91	100	10 <	5 <	1 <
SEP	1	13590.0	8.10	86	97	10 <	5 <	1 <
OCT	1	13364.0	8.04	96	100	10 <	5 <	1 <
NOV	1	11670.0	7.99	89	102	10 <	5	1 <
DEC	1	12190.0	7.91	93	96	10 <	5 <	1 <
JAN	1	8420.0	7.82	94	103	10 <	5 <	1 <
FEB	1	11615.0	7.95	94	105	10 <	5 <	1 <
MAR	2	15675.0	7.93	87	95	10 <	5 <	1
APR	2	19789.0	7.74	71	76	10 <	5 <	1 <
MAY	2	22444.0	7.75	70	76	10 <	5 <	1 <
JUN	1	21604.0	7.75	65	67	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		22444.0	8.19	96	105	10 <	5	1
Min		8420.0	7.74	65	67	10 <	5 <	1 <
Mean		14233.8	7.94	85	93	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	4.72	0.65

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 29 Clark Fork at Noxon Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 8	12200.0	(M)	7.94	84	89	10 <	5 <	1 <
Jul 28	15900.0	(M)	7.90	90	96	10 <	9	1
Aug 13	4380.0	(M)	7.89	90	98	10 <	5 <	1 <
Sep 16	16500.0	(M)	8.04	88	97	10 <	5 <	1 <
Oct 15	10200.0	(M)	7.98	95	98	10 <	5 <	1 <
Nov 19	15100.0	(M)	7.89	89	101	10 <	5	1 <
Dec 17	12900.0	(M)	7.91	96	98	10 <	5 <	1 <
Jan 14	11200.0	(M)	7.86	93	102	10 <	5 <	1 <
Feb 11	8700.0	(M)	7.77	95	105	10 <	5 <	1 <
Mar 9	15600.0	(M)	7.93	88	98	10 <	5 <	1 <
Mar 31	20000.0	(M)	7.90	87	96	10 <	5 <	1 <
Apr 14	17900.0	(M)	7.88	80	87	10 <	5 <	1 <
Apr 21	30800.0	(M)	7.76	72	81	10 <	5 <	1 <
May 3	20100.0	(M)	7.80	67	76	10 <	5 <	1 <
May 19	24200.0	(M)	7.67	70	77	10 <	5 <	1 <
Jun 2	21400.0	(M)	7.58	60	61	10 <	5 <	1 <
Jun 16	17200.0	(M)	7.74	65	65		5 <	1 <
N=	17		17	17	17	16	17	17
Max	30800.0		8.04	96	105	10 <	9	1
Min	4380.0		7.58	60	61	10 <	5 <	1 <
Mean	16134.1		7.85	83	90	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 29 Clark Fork at Noxon Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	9628.0	7.92	87	93	10 <	5 <	1 <
AUG	1	9230.0	7.89	90	98	10 <	5 <	1 <
SEP	1	12730.0	8.04	88	97	10 <	5 <	1 <
OCT	1	12260.0	7.98	95	98	10 <	5 <	1 <
NOV	1	11240.0	7.89	89	101	10 <	5	1 <
DEC	1	11110.0	7.91	96	98	10 <	5 <	1 <
JAN	1	7625.0	7.86	93	102	10 <	5 <	1 <
FEB	1	11040.0	7.77	95	105	10 <	5 <	1 <
MAR	2	15540.0	7.92	88	97	10 <	5 <	1 <
APR	2	20970.0	7.82	76	84	10 <	5 <	1 <
MAY	2	22444.0	7.74	69	77	10 <	5 <	1 <
JUN	1	21604.0	7.66	63	63	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		22444.0	8.04	96	105	10 <	5	1 <
Min		7625.0	7.66	63	63	10 <	5 <	1 <
Mean		13785.1	7.87	86	93	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	4.54	0.00

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 30 Clark Fork below Cabinet Gorge Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
Jul 8	16700.0	(M)	7.89	82	86	10 <	5 <	1 <
Jul 28	19600.0	(M)	7.90	89	94	10 <	5 <	1
Aug 13	7230.0	(M)	8.03	88	96	10 <	5 <	1 <
Sep 16	19700.0	(M)	8.01	87	98	10 <	5 <	1
Oct 15	12500.0	(M)	7.93	96	97	10 <	5 <	1 <
Nov 19	16100.0	(M)	7.87	90	102	10 <	8	1 <
Dec 17	15700.0	(M)	7.90	97	97	10 <	5 <	1 <
Jan 14	12700.0	(M)	7.84	91	100	10 <	5 <	1 <
Feb 11	9820.0	(M)	7.85	93	104	10 <	5 <	1 <
Mar 9	17800.0	(M)	7.90	90	96	10 <	5 <	1 <
Mar 31	21600.0	(M)	7.90	85	94	10 <	5 <	1 <
Apr 14	22900.0	(M)	7.79	82	88	10 <	5 <	1 <
Apr 21	36100.0	(M)	7.82	72	81	10 <	5 <	1 <
May 3	23700.0	(M)	7.78	66	73	10 <	5 <	1 <
May 19	27900.0	(M)	7.77	71	75	10 <	5 <	1 <
Jun 2	25300.0	(M)	7.64	59	62	10 <	5 <	1 <
Jun 16	21800.0	(M)	7.80	63	66		5 <	1 <
N=	17		17	17	17	16	17	17
Max	36100.0		8.03	97	104	10 <	8	1
Min	7230.0		7.64	59	62	10 <	5 <	1 <
Mean	19244.1		7.86	82	89	10 <	5 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 30 Clark Fork below Cabinet Gorge Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR As Conc. (ug/l)
JUL	2	12180.0	7.90	86	90	10 <	5 <	1 <
AUG	1	11390.0	8.03	88	96	10 <	5 <	1 <
SEP	1	14770.0	8.01	87	98	10 <	5 <	1
OCT	1	13990.0	7.93	96	97	10 <	5 <	1 <
NOV	1	12980.0	7.87	90	102	10 <	8	1 <
DEC	1	12990.0	7.90	97	97	10 <	5 <	1 <
JAN	1	8986.0	7.84	91	100	10 <	5 <	1 <
FEB	1	12880.0	7.85	93	104	10 <	5 <	1 <
MAR	2	17830.0	7.90	88	95	10 <	5 <	1 <
APR	2	25220.0	7.81	77	85	10 <	5 <	1 <
MAY	2	26990.0	7.78	69	74	10 <	5 <	1 <
JUN	1	24630.0	7.72	61	64	10 <	5 <	1 <
N=		12	12	12	12	12	12	12
Max		26990.0	8.03	97	104	10 <	8	1
Min		8986.0	7.72	61	64	10 <	5 <	1 <
Mean		16236.3	7.88	85	92	10 <	5 <	1 <
Annual Metals Load (tons/year)						0.00	8.40	1.19

Frequency of Exceedence	Cu	Zn	As
Chronic Criterion	0%	0%	0%
Acute Criterion	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	As
Chronic Criterion	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	As
CHRONIC	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

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FY 1989

CLARK FORK BASIN

METALS MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 00 Silver Bow Creek above Butte WWTP

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	6.3	(I)	7.72	110	202	360	973.0		2
Aug 15	8.1	(I)	7.88	114	197	320	956.0		2
Sep 12	8.1	(I)	6.41	106	175	250	835.0		4
Oct 11	8.3	(I)	7.15	108	189	260	743.0	2.8	2
Nov 14	7.7	(I)	6.99	104	175	280	767.0	2.4	5
Dec 12	7.3	(I)	7.33	103	178	270	738.0	2.0	5
Jan 17	6.7	(I)	7.27	103	166	230	638.0	1.8	4
Mar 20	11.5	(I)	6.92	94	167	260	810.0	2.4	4
Apr 5	13.8	(I)	7.15	92	168	300	910.0	2.4	4
Apr 18	19.8	(I)	7.22	79	139	160	554.0	1.5	4
May 2	16.2	(I)	7.42	85	154	170	606.0	1.9	3
May 16	22.6	(I)	7.58	82	139	160	526.0	1.5	12
May 30	15.5	(I)	7.86	90	155	210	655.0	1.6	2
Jun 14	10.1	(I)	7.66	106	180	260	809.0	2.3	2
Jun 26	9.2	(I)	7.47	107	189	290	903.0	2.4	1
N=	15		15	15	15	15	15	12	15
Max	22.6		7.88	114	202	360	973.0	2.8	12
Min	6.3		6.41	79	139	160	526.0	1.5	1
Mean	11.4		7.34	99	172	252	761.5	2.1	4

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00 Silver Bow Creek above Butte WWTP

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	6.3	7.72	110	202	360	973.0		2
AUG	1	8.1	7.88	114	197	320	956.0		2
SEP	1	8.1	6.41	108	189	260	743.0		2
OCT	1	8.3	7.15	108	189	260	743.0	2.8	2
NOV	1	7.7	6.99	104	175	280	767.0	2.4	5
DEC	1	7.3	7.33	103	178	270	738.0	2.0	5
JAN	1	6.7	7.27	103	166	230	638.0	1.8	4
FEB	0								
MAR	1	11.5	6.92	94	167	260	810.0	2.4	4
APR	2	16.8	7.19	86	154	230	732.0	2.0	4
MAY	3	18.1	7.62	86	149	180	595.7	1.7	6
JUN	2	9.7	7.57	107	185	275	856.0	2.4	2
N=		11	11	11	11	11	11	8	11
Max		18.1	7.88	114	202	360	973.0	2.8	6
Min		6.3	6.41	86	149	180	595.7	1.7	2
Mean		9.9	7.28	102	177	266	777.4	2.2	3
Annual Metals Load (tons/year)						2.27	6.79	0.01	0.03

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	100%	100%	96%	3%
Acute Criterion	100%	100%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	13.7 X	4.5 X	1.3 X	0.5 X
Acute Criterion	8.7 X	4.1 X	0.3 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	13.72	4.51	1.20	0.02
ACUTE	8.70	4.08	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	19.44
ACUTE	12.78

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 00.5 Butte Metro WWTP discharge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	7.2	(I)	6.99	138	109	12	24.0		2
Aug 15	7.6	(I)	7.74	141	126	8	48.0		3
Sep 12	9.4	(I)	6.21	129	164	55	3880.0		1
Oct 11	8.0	(I)	6.40	147	123	13	188.0	0.3	1 <
Nov 14	7.6	(I)	6.96	144	102	7	151.0	0.2 <	1
Dec 12	7.7	(I)	7.07	145	102	20	64.0	0.2 <	1 <
Jan 17	7.6	(I)	7.08	145	97	10	55.0	0.2 <	1
Mar 20	7.6	(I)	7.12	137	91	30	139.0	0.3	1 <
Apr 5	8.0	(I)	7.07	127	89	20	167.0	0.2 <	1
Apr 18	8.5	(I)	7.08	126	101	24	190.0	0.2	1
May 2	8.3	(I)	7.20	127	101	70	181.0	0.4	1
May 16	8.3	(I)	7.09	109	93	20	122.0	0.2 <	2
May 30	8.3	(I)	7.37	118	91	20	98.0	0.2 <	2
Jun 14	7.2	(I)	7.20	119	91	50	120.0	0.2 <	2
Jun 26	6.7	(I)	7.20	120	95	20	107.0	0.2	2
N=	15		15	15	15	15	15	12	15
Max	9.4		7.74	147	164	70	3880.0	0.4	3
Min	6.7		6.21	109	89	7	24.0	0.2 <	1 <
Mean	7.9		7.05	131	105	25	368.9	0.2 <	1

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00.5 Butte Metro WWTP discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	8.5	6.99	138	109	12	24.0		2
AUG	1	8.6	7.74	141	126	8	48.0		3
SEP	1	8.9	6.21	129	164	55	3880.0		1
OCT	1	7.7	6.40	147	123	13	188.0	0.3	1 <
NOV	1	6.8	6.96	144	102	7	151.0	0.2 <	1
DEC	1	6.7	7.07	145	102	20	64.0	0.2 <	1 <
JAN	1	7.6	7.08	145	97	10	55.0	0.2 <	1
FEB	0								
MAR	1	7.6	7.12	137	91	30	139.0	0.3	1 <
APR	2	8.3	7.08	127	95	22	178.5	0.2 <	1
MAY	3	8.3	7.22	118	95	37	133.7	0.2 <	2
JUN	2	6.9	7.20	120	93	35	113.5	0.2 <	2
N=		11	11	11	11	11	11	8	11
Max		8.9	7.74	147	164	55	3880.0	0.3	3
Min		6.7	6.21	118	91	7	24.0	0.2 <	1 <
Mean		7.8	7.01	135	109	23	452.2	0.2 <	1
Annual Metals Load (tons/year)						0.16	3.47	0.00	0.01

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	55%	64%	0%	0%
Acute Criterion	55%	56%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	1.8 X	3.1 X	0.1 X	0.3 X
Acute Criterion	1.2 X	2.8 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.98	1.98	0.00	0.00
ACUTE	0.65	1.58	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	2.96
ACUTE	2.23

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 01 Silver Bow Creek below Colorado Tailings

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	15.0	(M)	7.10	107	177	250	1120.0		51
Aug 15	21.0	(M)	7.78	118	181	170	1090.0		5
Sep 12	18.0	(M)	6.85	112	176	200	2250.0		9
Oct 11	16.0	(M)	7.20	120	174	250	967.0	2.9	9
Nov 14	13.0	(M)	7.07	115	159	390	1100.0	4.0	27
Dec 12	20.6	(I)	7.33	117	160	320	1000.0	3.0	22
Jan 17			7.39	116	153	320	978.0	3.2	32
Mar 20			7.26	107	153	270	1080.0	3.6	12
Apr 5			7.32	102	152	290	1120.0	3.0	7
Apr 18			7.23	91	138	210	830.0	2.5	9
May 2			7.59	98	144	210	862.0	2.7	5
May 16			7.49	88	140	240	858.0	2.6	21
May 30			7.42	96	145	230	946.0	2.6	4
Jun 14			7.50	107	161	250	1100.0	2.9	3
Jun 26			7.39	109	165	270	1140.0	2.9	2
N=	6		15	15	15	15	15	12	15
Max	21.0		7.78	120	181	390	2250.0	4.0	51
Min	13.0		6.85	88	138	170	830.0	2.5	2
Mean	17.3		7.33	107	159	258	1096.1	3.0	15

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 01 Silver Bow Creek below Colorado Tailings

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	16.5	7.10	107	177	250	1120.0		51
AUG	1	18.7	7.78	118	181	170	1090.0		5
SEP	1	16.9	6.85	112	176	200	2250.0		9
OCT	1	16.0	7.20	120	174	250	967.0	2.9	9
NOV	1	13.0	7.07	115	159	390	1100.0	4.0	27
DEC	1	20.6	7.33	117	160	320	1000.0	3.0	22
JAN	1	ERR	7.39	116	153	320	978.0	3.2	32
FEB	0								
MAR	1	ERR	7.26	107	153	270	1080.0	3.6	12
APR	2	ERR	7.28	97	145	250	975.0	2.8	8
MAY	3	ERR	7.50	94	143	227	888.7	2.6	10
JUN	2	ERR	7.45	108	163	260	1120.0	2.9	3
N=		11	11	11	11	11	11	8	11
Max		ERR	7.78	120	181	390	2250.0	4.0	51
Min		ERR	6.85	94	143	170	888.7	2.6	3
Mean		ERR	7.29	110	162	264	1142.6	3.1	17
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	100%	100%	100%	76%
Acute Criterion	100%	100%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	14.9 X	7.1 X	1.9 X	2.9 X
Acute Criterion	9.6 X	6.5 X	0.5 X	0.1 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	14.93	7.12	1.94	2.19
ACUTE	9.56	6.45	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	26.19
ACUTE	16.01

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	13.5	(I)	8.11	94	162	160	510.0		9
Aug 15	11.7	(I)	7.95	101	174	260	721.0		12
Sep 12	21.0	(I)	7.35	99	176	170	1340.0		10
Oct 11	19.4	(I)	7.55	106	177	180	851.0	2.5	9
Nov 14	24.6	(I)	7.40	106	155	190	710.0	2.1	13
Dec 12	23.2	(I)	7.53	106	160	190	653.0	1.8	18
Jan 17		(E)	7.50	114	164	220	784.0	2.4	17
Mar 20	24.9	(I)	7.51	97	185	440	1280.0	5.4	16
Apr 5	33.9	(I)	7.68	98	172	330	1050.0	4.4	8
Apr 18	50.7	(I)	7.30	81	155	230	715.0	2.7	18
May 2	44.2	(I)	8.14	88	167	220	753.0	3.2	12
May 16	46.0	(I)	7.71	84	163	380	1050.0	3.8	62
May 30	32.8	(I)	7.94	97	166	240	872.0	2.9	9
Jun 14	30.8	(I)	7.99	79	144	160	615.0	2.0	6
Jun 26	23.7	(I)	8.28	94	175	180	740.0	2.2	5
N=	14		15	15	15	15	15	12	15
Max	50.7		8.28	114	185	440	1340.0	5.4	62
Min	11.7		7.30	79	144	160	510.0	1.8	5
Mean	28.6		7.73	96	166	237	842.9	3.0	15

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	13.5	8.11	94	162	160	510.0		9
AUG	1	11.7	7.95	101	174	260	721.0		12
SEP	1	21.0	7.35	99	176	170	1340.0		10
OCT	1	19.4	7.55	106	177	180	851.0	2.5	9
NOV	1	24.6	7.40	106	155	190	710.0	2.1	13
DEC	1	23.2	7.53	106	160	190	653.0	1.8	18
JAN	1	ERR	7.50	114	164	220	784.0	2.4	17
FEB	0								
MAR	1	24.9	7.51	97	185	440	1280.0	5.4	16
APR	2	42.3	7.49	90	164	280	882.5	3.6	13
MAY	3	41.0	7.93	90	165	280	891.7	3.3	28
JUN	2	27.3	8.14	87	160	170	677.5	2.1	6
N=		11	11	11	11	11	11	8	11
Max		ERR	8.14	114	185	440	1340.0	5.4	28
Min		ERR	7.35	87	155	160	510.0	1.8	6
Mean		ERR	7.68	99	167	231	845.5	2.9	14
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	100%	100%	100%	95%
Acute Criterion	100%	100%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	12.5 X	5.1 X	1.7 X	2.2 X
Acute Criterion	8.0 X	4.6 X	0.4 X	0.1 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	12.50	5.12	1.70	2.14
ACUTE	7.97	4.64	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	21.45
ACUTE	12.60

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	28.6	(I)	8.37	103	167	140	312.0		9
Aug 15	16.3	(I)	8.10	108	180	210	621.0		12
Sep 12	29.2	(I)	8.00	101	177	230	1110.0		22
Oct 11	26.6	(I)	7.70	107	181	140	511.0	1.6	10
Nov 14	31.1	(I)	7.48	102	154	200	698.0	2.2	18
Dec 12	34.3	(I)	7.82	100	152	430	968.0	3.1	48
Jan 17	27.1	(I)	7.49	101	163	140	699.0	2.2	8
Mar 20	34.7	(I)	7.52	94	175	310	994.0	4.2	21
Apr 5	45.6	(I)	7.91	94	178	340	1070.0	5.0	13
Apr 18	68.3	(I)	7.89	80	138	230	620.0	2.4	22
May 2	68.5	(I)	8.45	76	135	170	500.0	2.4	10
May 16	90.0	(I)	7.73	56	118	620	1170.0	4.2	108
May 30	63.0	(I)	8.09	83	130	150	500.0	1.7	8
Jun 14	54.9	(I)	8.50	78	120	100	278.0	1.1	7
Jun 26	40.4	(I)	8.52	92	148	110	375.0	1.3	6
N=	15		15	15	15	15	15	12	15
Max	90.0		8.52	108	181	620	1170.0	5.0	108
Min	16.3		7.48	56	118	100	278.0	1.1	6
Mean	43.9		7.97	92	154	235	695.1	2.6	21

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	28.6	8.37	103	167	140	312.0		9
AUG	1	16.3	8.10	108	180	210	621.0		12
SEP	1	29.2	8.00	101	177	230	1110.0		22
OCT	1	26.6	7.70	107	181	140	511.0	1.6	10
NOV	1	31.1	7.48	102	154	200	698.0	2.2	18
DEC	1	34.3	7.82	100	152	430	968.0	3.1	48
JAN	1	27.1	7.49	101	163	140	699.0	2.2	8
FEB	0								
MAR	1	34.7	7.52	94	175	310	994.0	4.2	21
APR	2	57.0	7.90	87	158	285	845.0	3.7	18
MAY	3	73.8	8.09	72	128	313	723.3	2.8	42
JUN	2	47.7	8.51	85	134	105	326.5	1.2	7
N=		11	11	11	11	11	11	8	11
Max		73.8	8.51	108	181	430	1110.0	4.2	48
Min		16.3	7.48	72	128	105	312.0	1.2	7
Mean		36.9	7.91	96	161	228	709.8	2.6	19
Annual Metals Load (tons/year)						8.08	23.95	0.07	0.74

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	100%	100%	75%	100%
Acute Criterion	100%	100%	0%	3%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	13.0 X	4.5 X	1.6 X	3.5 X
Acute Criterion	8.4 X	4.1 X	0.4 X	0.1 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	13.03	4.49	1.23	3.54
ACUTE	8.36	4.07	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	22.29
ACUTE	12.43

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	22.6	(I)	9.39	63	159	9	13.0		1 <
Aug 15	5.7	(I)	8.30	50	164	3	7.2		1 <
Sep 13	4.6	(I)	8.60	50	183	4	61.0		1 <
Oct 11	17.7	(I)	8.45	62	184	6	5.9	0.2 <	1
Nov 14	12.5	(I)	7.66	86	231	9	23.0	0.2 <	4
Dec 12	19.0	(I)	8.01	107	248	12	70.0	0.3	1
Jan 17	23.4	(I)	8.02	121	248	20	119.0	0.4	2
Mar 20	78.9	(I)	7.65	49	148	210	576.0	2.2	55
Apr 5	34.2	(I)	7.92	79	204	70	293.0	1.0	13
Apr 18	77.2	(I)	8.88	79	202	50	159.0	0.4	7
May 2	67.9	(I)	8.82	78	185	20	58.0	0.2	3
May 16	77.9	(I)	9.07	76	174	20	64.0	0.3	3
May 30	66.0	(I)	8.96	73	175	20	34.0	0.2 <	2
Jun 14	28.1	(I)	9.70	44	135	20	23.0	0.5	1 <
Jun 26	36.0	(I)	9.76	37	133	10	29.0	0.2	2
N=	15		15	15	15	15	15	12	15
Max	78.9		9.76	121	248	210	576.0	2.2	55
Min	4.6		7.65	37	133	3	5.9	0.2 <	1 <
Mean	38.1		8.61	70	185	32	102.3	0.5	6

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	22.6	9.39	63	159	9	13.0		1 <
AUG	1	5.7	8.30	50	164	3	7.2		1 <
SEP	1	4.6	8.60	50	183	4	61.0		1 <
OCT	1	17.7	8.45	62	184	6	5.9	0.2 <	1
NOV	1	12.5	7.66	86	231	9	23.0	0.2 <	4
DEC	1	19.0	8.01	107	248	12	70.0	0.3	1
JAN	1	23.4	8.02	121	248	20	119.0	0.4	2
FEB	0								
MAR	1	78.9	7.65	49	148	210	576.0	2.2	55
APR	2	55.7	8.40	79	203	60	226.0	0.7	10
MAY	3	70.6	8.95	76	178	20	52.0	0.2 <	3
JUN	2	32.1	9.73	41	134	15	26.0	0.4	1
N=		11	11	11	11	11	11	8	11
Max		78.9	9.73	121	248	210	576.0	2.2	55
Min		4.6	7.65	41	134	3	5.9	0.2 <	1 <
Mean		31.2	8.47	71	189	33	107.2	0.5	7
Annual Metals Load (tons/year)						1.91	5.61	0.02	0.44

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	29%	14%	13%	14%
Acute Criterion	18%	14%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	1.8 X	0.6 X	0.3 X	1.2 X
Acute Criterion	1.2 X	0.6 X	0.1 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.53	0.09	0.04	0.16
ACUTE	0.21	0.08	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.82
ACUTE	0.29

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 05 Mill-Willow Bypass at mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	9.6	(I)	8.16	110	359	9	20.0		1 <
Aug 15	9.7	(I)	8.08	115	363	7	16.0		1 <
Sep 12	9.2	(I)	7.90	109	370	10	21.0		1 <
Oct 11	14.6	(I)	7.45	111	350	35	59.0	0.3	1 <
Nov 14	15.9	(I)	7.76	117	341	29	60.0	0.3	1
Dec 12	18.9	(I)	8.05	111	311	29	55.0	0.3	1 <
Jan 17	17.1	(I)	8.00	111	287	20	61.0	0.3	1 <
Mar 20	22.9	(I)	7.97	107	300	80	177.0	0.8	6
Apr 5	23.3	(I)	8.19	108	320	50	118.0	0.5	3
Apr 18	34.9	(I)	8.42	87	212	30	45.0	0.2	2
May 2	38.2	(I)	8.45	76	189	40	49.0	0.2	1
May 16	77.9	(I)	8.37	60	110	20	31.0	0.2	2
May 30	57.4	(I)	8.58	74	145	20	23.0	0.2 <	1 <
Jun 14	80.4	(I)	8.13	51	93	20	32.0	0.2 <	1 <
Jun 26	47.1	(I)	8.36	79	153	10	23.0	0.3	1 <
N=	15		15	15	15	15	15	12	15
Max	80.4		8.58	117	370	80	177.0	0.8	6
Min	9.2		7.45	51	93	7	16.0	0.2 <	1 <
Mean	31.8		8.12	95	260	27	52.7	0.3	1

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 05 Mill-Willow Bypass at mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	9.6	8.16	110	359	9	20.0		1 <
AUG	1	9.7	8.08	115	363	7	16.0		1 <
SEP	1	9.2	7.90	109	370	10	21.0		1 <
OCT	1	14.6	7.45	111	350	35	59.0	0.3	1 <
NOV	1	15.9	7.76	117	341	29	60.0	0.3	1
DEC	1	18.9	8.05	111	311	29	55.0	0.3	1 <
JAN	1	17.1	8.00	111	287	20	61.0	0.3	1 <
FEB	0								
MAR	1	22.9	7.97	107	300	80	177.0	0.8	6
APR	2	29.1	8.31	98	266	40	81.5	0.4	3
MAY	3	57.8	8.47	70	148	27	34.3	0.2 <	1
JUN	2	63.8	8.25	65	123	15	27.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		63.8	8.47	117	370	80	177.0	0.8	6
Min		9.2	7.45	65	123	7	16.0	0.2 <	1 <
Mean		24.4	8.04	102	293	27	55.7	0.3	1
Annual Metals Load (tons/year)						0.63	1.21	0.00	0.02

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	41%	0%	0%	0%
Acute Criterion	20%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	1.0 X	0.2 X	0.1 X	0.1 X
Acute Criterion	0.6 X	0.2 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.41	0.00	0.00	0.00
ACUTE	0.12	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.41
ACUTE	0.12

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 06 Warm Springs Creek at mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	1.4	(I)	8.11	154	692	5	0.9		1 <
Aug 15	0.4	(I)	8.17	172	819	8	1.0		1 <
Sep 12	2.6	(I)	7.50	174	818	5	2.5		1 <
Oct 11	9.8	(I)	7.35	168	551	3	4.2	0.2 <	1 <
Nov 14	18.2	(I)	7.89	145	323	3	3.0	0.2 <	1 <
Dec 12	17.5	(I)	8.28	145	334	2	8.0	0.2 <	1 <
Jan 17	5.4	(I)	8.00	177	624	7	12.0	0.2	1 <
Mar 20	25.6	(I)	8.21	140	287	10	7.0	0.2 <	1 <
Apr 5	26.2	(I)	8.61	143	309	6	9.0	0.2 <	2
Apr 18	35.9	(I)	8.58	131	259	3	2.0	0.2 <	1 <
May 2	46.1	(I)	8.69	120	224	9	1.3	0.2 <	1 <
May 16	43.2	(I)	8.61	109	201	7	10.0	0.2 <	1
May 30	43.9	(I)	8.51	102	185	6	1.9	0.2 <	1 <
Jun 14	107.8	(I)	8.19	64	101	9	5.0	0.2 <	1 <
Jun 26	63.6	(I)	8.17	84	135	10	14.0	0.2 <	1 <
N=	15		15	15	15	15	15	12	15
Max	107.8		8.69	177	819	10	14.0	0.2	2
Min	0.4		7.35	64	101	2	0.9	0.2 <	1 <
Mean	29.8		8.19	135	391	6	5.5	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 06 Warm Springs Creek at mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	2.2	8.11	154	692	5	0.9		1 <
AUG	1	0.5	8.17	172	819	8	1.0		1 <
SEP	1	2.6	7.50	174	818	5	2.5		1 <
OCT	1	13.4	7.35	168	551	3	4.2	0.2 <	1 <
NOV	1	20.8	7.89	145	323	3	3.0	0.2 <	1 <
DEC	1	12.3	8.28	145	334	2	8.0	0.2 <	1 <
JAN	1	5.4	8.00	177	624	7	12.0	0.2	1 <
FEB	0								
MAR	1	25.6	8.21	140	287	10	7.0	0.2 <	1 <
APR	2	31.1	8.60	137	284	5	5.5	0.2 <	1
MAY	3	44.4	8.60	110	203	7	4.4	0.2 <	1 <
JUN	2	85.7	8.18	74	118	10	9.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		85.7	8.60	177	819	10	12.0	0.2	1
Min		0.5	7.35	74	118	2	0.9	0.2 <	1 <
Mean		22.2	8.08	145	459	6	5.3	0.2 <	1 <
Annual Metals Load (tons/year)						0.14	0.14	0.00	0.00

	Cu	Zn	Cd	Pb
Frequency of Exceedence				
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%
Magnitude of Exceedence				
Chronic Criterion	0.2 X	0.0 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.0 X	0.0 X	0.0 X
METALS SEVERITY SCORE				
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 07 Clark Fork below Warm Springs Creek

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	34.2	(I)	8.89	82	251	9	12.0		1 <
Aug 15	15.1	(I)	8.07	100	323	11	23.0		1
Sep 12	16.9	(I)	8.15	105	387	10	19.0		1 <
Oct 11	48.9	(I)	7.65	107	349	14	47.0	0.2	1 <
Nov 14	48.5	(I)	7.99	120	318	9	21.0	0.2 <	1
Dec 12	53.1	(I)	8.48	124	313	12	41.0	0.2	1 <
Jan 17	45.5	(I)	8.41	127	322	20	79.0	0.3	1
Mar 20	122.3	(I)	7.66	81	217	120	354.0	1.2	34
Apr 5	83.7	(E)	8.30	105	268	40	142.0	0.7	6
Apr 18	156.1	(I)	8.54	94	221	27	84.0	0.3	4
May 2	152.2	(E)	8.54	90	202	20	42.0	0.2	2
May 16	193.8	(I)	8.51	78	157	20	33.0	0.6	2
May 30	162.2	(I)	8.81	81	175	10	21.0	0.2 <	1
Jun 14	219.4	(I)	8.47	56	104	13	19.0	0.2 <	1 <
Jun 26	147.6	(I)	8.46	74	147	10	23.0	0.2 <	1 <
N=	15		15	15	15	15	15	12	15
Max	219.4		8.89	127	387	120	354.0	1.2	34
Min	15.1		7.65	56	104	9	12.0	0.2 <	1 <
Mean	100.0		8.33	95	250	23	64.0	0.3	3

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 07 Clark Fork below Warm Springs Creek

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	34.2	8.89	82	251	9	12.0		1 <
AUG	1	15.1	8.07	100	323	11	23.0		1
SEP	1	16.9	8.15	105	387	10	19.0		1 <
OCT	1	48.9	7.65	107	349	14	47.0	0.2	1 <
NOV	1	48.5	7.99	120	318	9	21.0	0.2 <	1
DEC	1	53.1	8.48	124	313	12	41.0	0.2	1 <
JAN	1	45.5	8.41	127	322	20	79.0	0.3	1
FEB	0								
MAR	1	122.3	7.66	81	217	120	354.0	1.2	34
APR	2	119.9	8.42	100	245	34	113.0	0.5	5
MAY	3	169.4	8.62	83	178	17	32.0	0.3	2
JUN	2	183.5	8.47	65	126	12	21.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		183.5	8.89	127	387	120	354.0	1.2	34
Min		15.1	7.65	65	126	9	12.0	0.2 <	1 <
Mean		77.9	8.26	99	275	24	69.3	0.3	4
Annual Metals Load (tons/year)						2.23	6.32	0.02	0.43

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	26%	9%	0%	9%
Acute Criterion	9%	9%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	1.0 X	0.3 X	0.1 X	0.5 X
Acute Criterion	0.6 X	0.3 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.25	0.03	0.00	0.04
ACUTE	0.06	0.03	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.32
ACUTE	0.08

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 08 Clark Fork near Dempsey

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 11	10.7	(I)	8.24	124	272	15	10.0		1 <
Aug 16	3.1	(I)	8.07	188	300	7	13.0		1 <
Sep 13	8.1	(I)	7.65	179	361	9	8.0		1 <
Oct 12	69.7	(I)	7.60	154	342	12	15.0	0.2 <	1 <
Nov 15	89.1	(I)	7.88	172	343	20	32.0	0.2	3
Dec 12	114.8	(I)	8.24	157	323	13	34.0	0.2	2
Jan 17	105.2	(I)	8.14	158	334	10	46.0	0.2	1
Mar 21	172.4	(I)	7.90	118	261	80	216.0	1.0	22
Apr 6	176.4	(I)	8.07	130	291	50	127.0	0.6	9
Apr 18	217.8	(I)	8.42	119	254	20	56.0	0.2	2
May 2	217.9	(I)	8.74	109	236	20	33.0	0.2	2
May 16	235.4	(I)	8.82	91	178	30	38.0	0.3	3
May 30	185.5	(I)	8.88	94	194	20	19.0	0.2 <	1
Jun 14	187.3	(I)	8.76	67	123	10	24.0	0.2	2
Jun 26	120.9	(I)	8.79	88	168	20	24.0	0.2 <	1
N=	15		15	15	15	15	15	12	15
Max	235.4		8.88	188	361	80	216.0	1.0	22
Min	3.1		7.60	67	123	7	8.0	0.2 <	1 <
Mean	127.6		8.28	130	265	22	46.3	0.3	3

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 08 Clark Fork near Dempsey

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	10.7	8.24	124	272	15	10.0		1 <
AUG	1	3.1	8.07	188	300	7	13.0		1 <
SEP	1	8.1	7.65	179	361	9	8.0		1 <
OCT	1	69.7	7.60	154	342	12	15.0	0.2 <	1 <
NOV	1	89.1	7.88	172	343	20	32.0	0.2	3
DEC	1	114.8	8.24	157	323	13	34.0	0.2	2
JAN	1	105.2	8.14	158	334	10	46.0	0.2	1
FEB	0								
MAR	1	172.4	7.90	118	261	80	216.0	1.0	22
APR	2	197.1	8.25	125	273	35	91.5	0.4	6
MAY	3	212.9	8.81	98	203	23	30.0	0.2 <	2
JUN	2	154.1	8.78	78	146	15	24.0	0.1	2
N=		11	11	11	11	11	11	8	11
Max		212.9	8.81	188	361	80	216.0	1.0	22
Min		3.1	7.60	78	146	7	8.0	0.1 <	1 <
Mean		103.4	8.14	141	287	22	47.2	0.3	3
Annual Metals Load (tons/year)						2.76	6.47	0.03	0.51

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	21%	0%	0%	9%
Acute Criterion	14%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.8 X	0.2 X	0.1 X	0.3 X
Acute Criterion	0.5 X	0.2 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.17	0.00	0.00	0.03
ACUTE	0.07	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.20
ACUTE	0.07

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 09 Clark Fork at Deer Lodge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	40.0	(M)	7.78	178	257	12	10.0		1 <
Aug 16	25.0	(M)	8.15	187	250	8	9.2		1 <
Sep 13	49.0	(M)	8.10	172	268	10	10.0		1 <
Oct 12	110.0	(M)	8.45	162	325	20	22.0	0.2	2
Nov 15	139.0	(M)	7.90	170	311	23	38.0	0.2	3
Dec 13	206.8	(M)	7.80	155	281	56	66.0	0.3	8
Jan 17	144.2	(M)	8.60	149	279	30	60.0	0.3	4
Mar 21	274.0	(M)	7.77	122	251	80	168.0	0.5	18
Apr 6	249.9	(M)	8.16	137	273	30	149.0	0.3	6
Apr 19	283.9	(M)	8.15	127	258	60	106.0	0.4	6
May 2	278.9	(M)	8.50	120	246	30	40.0	0.3	3
May 16		(M)	8.58	105	194	40	78.0	0.3	3
May 30		(M)	8.91	109	203	20	33.0	0.2 <	2
Jun 14		(M)	8.64	89	149	20	33.0	0.2	2
Jun 26		(M)	8.91	114	192	10	24.0	0.2	1
N=	11		15	15	15	15	15	12	15
Max	283.9		8.91	187	325	80	168.0	0.5	18
Min	25.0		7.77	89	149	8	9.2	0.2 <	1 <
Mean	163.7		8.29	140	249	30	56.4	0.3	4

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 09 Clark Fork at Deer Lodge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	34.3	7.78	178	257	12	10.0		1 <
AUG	1	27.8	8.15	187	250	8	9.2		1 <
SEP	1	57.8	8.10	172	268	10	10.0		1 <
OCT	1	114.0	8.45	162	325	20	22.0	0.2	2
NOV	1	154.0	7.90	170	311	23	38.0	0.2	3
DEC	1	206.8	7.80	155	281	56	66.0	0.3	8
JAN	1	144.2	8.60	149	279	30	60.0	0.3	4
FEB	0								
MAR	1	274.0	7.77	122	251	80	168.0	0.5	18
APR	2	266.9	8.16	132	266	45	127.5	0.4	6
MAY	3	278.9	8.66	111	214	30	50.3	0.2	3
JUN	2	ERR	8.78	102	171	15	28.5	0.2	2
N=		11	11	11	11	11	11	8	11
Max		ERR	8.78	187	325	80	168.0	0.5	18
Min		ERR	7.77	102	171	8	9.2	0.2	1 <
Mean		ERR	8.19	149	261	30	53.6	0.3	4
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

	Cu	Zn	Cd	Pb
Frequency of Exceedence				
Chronic Criterion	47%	0%	0%	9%
Acute Criterion	26%	0%	0%	0%
Magnitude of Exceedence				
Chronic Criterion	1.1 X	0.2 X	0.1 X	0.4 X
Acute Criterion	0.7 X	0.2 X	0.0 X	0.0 X
METALS SEVERITY SCORE				
CHRONIC	0.53	0.00	0.00	0.03
ACUTE	0.18	0.00	0.00	0.00
CUMULATIVE SCORE				
CHRONIC	0.56			
ACUTE	0.18			

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 10 Clark Fork above Little Blackfoot River

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	40.0	(E)	8.00	192	254	15	13.0		1
Aug 16	34.1	(I)	8.23	186	237	8	10.0		1 <
Sep 13	55.2	(I)	8.20	185	259	12	21.0		2
Oct 12	123.4	(I)	8.92	159	317	21	18.0	0.2	1
Nov 15	150.5	(I)	8.11	175	306	22	35.0	0.2 <	3
Dec 13	193.0	(I)	7.80	161	285	67	105.0	0.5	8
Jan 17			8.09	156	273	17	36.0	0.3	2
Mar 21	287.8	(I)	7.92	133	251	80	148.0	0.5	16
Apr 6	296.1	(I)	7.97	138	263	60	90.0	0.4	9
Apr 19	308.5	(I)	8.41	133	246	40	22.0	0.5	3
May 3	289.8	(I)	8.37	129	246	40	56.0	0.2	4
May 17	272.6	(I)	8.33	116	202	40	59.0	0.3	4
May 31	215.2	(I)	8.45	136	224	20	21.0	0.2 <	1
Jun 14	243.2	(I)	8.68	128	182	20	26.0	0.2 <	2
Jun 27	160.6	(I)	8.91	148	215	20	27.0	0.2 <	1
N=	14		15	15	15	15	15	12	15
Max	308.5		8.92	192	317	80	148.0	0.5	16
Min	34.1		7.80	116	182	8	10.0	0.2 <	1 <
Mean	190.7		8.29	152	251	32	45.8	0.2	4

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 10 Clark Fork above Little Blackfoot River

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	40.0	8.00	192	254	15	13.0		1
AUG	1	34.1	8.23	186	237	8	10.0		1 <
SEP	1	55.2	8.20	185	259	12	21.0		2
OCT	1	123.4	8.92	159	317	21	18.0	0.2	1
NOV	1	150.5	8.11	175	306	22	35.0	0.2 <	3
DEC	1	193.0	7.80	161	285	67	105.0	0.5	8
JAN	1	ERR	8.09	156	273	17	36.0	0.3	2
FEB	0								
MAR	1	287.8	7.92	133	251	80	148.0	0.5	16
APR	2	302.3	8.19	136	255	50	56.0	0.5	6
MAY	3	259.2	8.38	127	224	33	45.3	0.2 <	3
JUN	2	201.9	8.80	138	199	20	26.5	0.2 <	2
N=		11	11	11	11	11	11	8	11
Max		ERR	8.92	192	317	80	148.0	0.5	16
Min		ERR	7.80	127	199	8	10.0	0.2 <	1 <
Mean		ERR	8.24	159	260	31	46.7	0.2	4
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	38%	0%	0%	9%
Acute Criterion	26%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	1.2 X	0.2 X	0.1 X	0.4 X
Acute Criterion	0.7 X	0.2 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.45	0.00	0.00	0.03
ACUTE	0.19	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.48
ACUTE	0.19

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 11 Clark Fork at Gold Creek Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	156.0	(M)	8.13	166	217	9	15.0		1 <
Aug 15	76.0	(M)	8.13	176	229	5	7.8		1 <
Sep 13	85.0	(M)	7.89	180	251	12	14.0		2
Oct 11	177.0	(M)	7.67	164	262	17	23.0	0.2	2
Nov 15	237.0	(M)	7.88	171	277	12	16.0	0.2 <	2
Dec 13	285.0	(M)	7.80	155	260	42	70.0	0.3	6
Jan 17			7.33	155	259	10	29.0	0.2 <	1
Mar 21			7.95	132	225	60	102.0	0.4	11
Apr 5			7.61	143	236	20	35.0	0.2 <	2
Apr 18			7.32	112	177	17	29.0	0.2 <	2
May 2			7.85	109	168	20	26.0	0.2 <	2
May 16			7.87	97	141	20	32.0	0.2 <	3
May 30			8.10	116	168	13	17.0	0.2 <	1 <
Jun 14			8.18	115	158	20	25.0	0.3	2
Jun 27			8.11	144	194	10	21.0	0.2 <	1 <
N=	6		15	15	15	15	15	12	15
Max	285.0		8.18	180	277	60	102.0	0.4	11
Min	76.0		7.32	97	141	5	7.8	0.2 <	1 <
Mean	169.3		7.85	142	215	19	30.8	0.2 <	2

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 11 Clark Fork at Gold Creek Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	133.0	8.13	166	217	9	15.0		1 <
AUG	1	72.8	8.13	176	229	5	7.8		1 <
SEP	1	99.8	7.89	180	251	12	14.0		2
OCT	1	198.0	7.67	164	262	17	23.0	0.2	2
NOV	1	244.0	7.88	171	277	12	16.0	0.2 <	2
DEC	1	263.0	7.80	155	260	42	70.0	0.3	6
JAN	1	ERR	7.33	155	259	10	29.0	0.2 <	1
FEB	0								
MAR	1	ERR	7.95	132	225	60	102.0	0.4	11
APR	2	ERR	7.47	128	207	19	32.0	0.2 <	2
MAY	3	ERR	7.94	107	159	18	25.0	0.2 <	2
JUN	2	ERR	8.15	130	176	15	23.0	0.2 <	1
N=		11	11	11	11	11	11	8	11
Max		ERR	8.15	180	277	60	102.0	0.4	11
Min		ERR	7.33	107	159	5	7.8	0.2 <	1 <
Mean		ERR	7.85	151	229	20	32.4	0.2 <	3
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	29%	0%	0%	9%
Acute Criterion	9%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.8 X	0.2 X	0.0 X	0.3 X
Acute Criterion	0.5 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.24	0.00	0.00	0.03
ACUTE	0.05	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.27
ACUTE	0.05

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 12 Clark Fork at Bonita

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	271.0	(M)	8.16	185	286	5	11.0		1 <
Aug 15	128.0	(M)	8.21	171	311	4	11.0		1 <
Sep 13	176.0	(M)	8.08	192	320	11	8.0		2
Oct 11	390.0	(M)	7.86	188	302	12	27.0	0.2 <	2
Nov 15	453.0	(M)	7.99	173	270	8	14.0	0.2 <	2
Dec 13	474.0	(E)	7.87	164	267	17	45.0	0.2	3
Jan 17			7.84	161	260	5	22.0	0.2 <	1
Mar 22			7.89	142	227	5	94.0	0.3	12
Apr 5			7.78	152	246	10	24.0	0.2 <	2
Apr 18			7.67	119	187	15	40.0	0.2 <	3
May 2			7.99	119	181	10	21.0	0.2 <	2
May 16			8.00	104	155	20	37.0	0.2	3
May 30			8.24	134	206	12	16.0	0.2 <	1 <
Jun 13			8.34	144	211	10	18.0	0.2 <	1
Jun 27			8.29	172	247	11	22.0	0.2 <	1 <
N=	6		15	15	15	15	15	12	15
Max	474.0		8.34	192	320	20	94.0	0.3	12
Min	128.0		7.67	104	155	4	8.0	0.2 <	1 <
Mean	315.3		8.01	155	245	10	27.3	0.2 <	2

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 12 Clark Fork at Bonita

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	239.0	8.16	185	286	5	11.0		1 <
AUG	1	111.0	8.21	171	311	4	11.0		1 <
SEP	1	184.0	8.08	192	320	11	8.0		2
OCT	1	390.0	7.86	188	302	12	27.0	0.2 <	2
NOV	1	453.0	7.99	173	270	8	14.0	0.2 <	2
DEC	1	474.0	7.87	164	267	17	45.0	0.2	3
JAN	1	ERR	7.84	161	260	5	22.0	0.2 <	1
FEB	0								
MAR	1	ERR	7.89	142	227	5	94.0	0.3	12
APR	2	ERR	7.73	136	217	13	32.0	0.2 <	3
MAY	3	ERR	8.08	119	181	14	24.7	0.2 <	2
JUN	2	ERR	8.32	158	229	11	20.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.32	192	320	17	94.0	0.3	12
Min		ERR	7.73	119	181	4	8.0	0.2 <	1 <
Mean		ERR	8.00	163	261	9	28.1	0.2 <	2
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	3%	0%	0%	9%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.4 X	0.1 X	0.0 X	0.2 X
Acute Criterion	0.2 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.01	0.00	0.00	0.02
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.03
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 13 Clark Fork at Turah

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR In Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	659.0	(M)	8.23	120	165	2	5.5		1 <
Aug 15	284.0	(M)	8.14	114	172	2	5.7		1 <
Sep 13	239.0	(M)	8.02	131	190	4	9.0		1 <
Oct 11	515.0	(M)	7.91	146	222	5	14.0	0.3	1 <
Nov 15	633.0	(I)	8.00	144	213	3	13.0	0.2 <	1 <
Dec 13	701.7	(I)	7.93	137	212	6	57.0	0.2 <	1
Jan 17			7.59	134	207	1 <	15.0	0.2 <	1 <
Mar 22			7.84	126	192	39	55.0	1.2	7
Apr 5			7.86	133	204	11	12.0	0.2 <	1
Apr 18			7.74	93	138	14	31.0	0.2 <	3
May 2			7.72	93	133	8	13.0	0.2 <	1
May 16			7.60	71	95	10	29.0	0.2 <	2
May 30			8.20	82	115	5	12.0	0.2 <	1 <
Jun 13			8.26	80	108	5	8.0	0.2 <	1 <
Jun 27			8.29	106	137	4	6.0	0.2 <	1 <
N=	6		15	15	15	15	15	12	15
Max	701.7		8.29	146	222	39	57.0	1.2	7
Min	239.0		7.59	71	95	1 <	5.5	0.2 <	1 <
Mean	505.3		7.96	114	167	8	19.0	0.2 <	1

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 13 Clark Fork at Turah

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	597.0	8.23	120	165	2	5.5		1 <
AUG	1	273.0	8.14	114	172	2	5.7		1 <
SEP	1	357.0	8.02	131	190	4	9.0		1 <
OCT	1	515.0	7.91	146	222	5	14.0	0.3	1 <
NOV	1	633.0	8.00	144	213	3	13.0	0.2 <	1 <
DEC	1	701.7	7.93	137	212	6	57.0	0.2 <	1
JAN	1	ERR	7.59	134	207	1 <	15.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.84	126	192	39	55.0	1.2	7
APR	2	ERR	7.80	113	171	13	21.5	0.2 <	2
MAY	3	ERR	7.84	82	114	8	18.0	0.2 <	1
JUN	2	ERR	8.28	93	123	5	7.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.28	146	222	39	57.0	1.2	7
Min		ERR	7.59	82	114	1 <	5.5	0.2 <	1 <
Mean		ERR	7.96	122	180	8	20.1	0.2 <	1
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	9%	0%	0%	0%
Acute Criterion	9%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.4 X	0.1 X	0.1 X	0.2 X
Acute Criterion	0.3 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.04	0.00	0.00	0.00
ACUTE	0.02	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.04
ACUTE	0.02

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 14 Blackfoot River at USGS station near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	665.0	(M)	8.19	117	130	1 <	0.5 <		1 <
Aug 15	383.0	(M)	8.15	125	135	1 <	0.9		1 <
Sep 13	395.0	(M)	8.03	132	146	1 <	2.9		1 <
Oct 11	369.1	(I)	7.85	138	153	1 <	4.5	0.2 <	1 <
Nov 15	564.8	(I)	7.94	122	131	1 <	0.6	0.2	1 <
Dec 13	583.2	(I)	7.89	119	134	1 <	1.2	0.2 <	1 <
Jan 17			7.70	115	126	2	73.0	0.2 <	1 <
Mar 22			7.80	104	112	1 <	2.2	1.1	1 <
Apr 5			7.95	106	113	1 <	2.1	0.2 <	1 <
Apr 18			7.64	72	80	1 <	16.0	0.2 <	1 <
May 2			7.81	73	82	1 <	0.5 <	0.2 <	1 <
May 16			7.80	74	87	1	1.8	0.2 <	1 <
May 30			8.22	88	98	1	0.5	0.2 <	1 <
Jun 13			8.16	75	84	1 <	5.0	0.2 <	1 <
Jun 27			8.29	98	105	1 <	17.0	0.2 <	1 <
N=	6		15	15	15	15	15	12	15
Max	665.0		8.29	138	153	2	73.0	1.1	1 <
Min	369.1		7.64	72	80	1 <	0.5 <	0.2 <	1 <
Mean	493.4		7.96	104	114	1 <	8.5	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 14 Blackfoot River at USGS station near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	623.0	8.19	117	130	1 <	0.5 <		1 <
AUG	1	365.0	8.15	125	135	1 <	0.9		1 <
SEP	1	363.0	8.03	132	146	1 <	2.9		1 <
OCT	1	369.1	7.85	138	153	1 <	4.5	0.2 <	1 <
NOV	1	564.8	7.94	122	131	1 <	0.6	0.2	1 <
DEC	1	583.2	7.89	119	134	1 <	1.2	0.2 <	1 <
JAN	1	ERR	7.70	115	126	2	73.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.80	104	112	1 <	2.2	1.1	1 <
APR	2	ERR	7.80	89	97	1 <	9.1	0.2 <	1 <
MAY	3	ERR	7.94	78	89	1 <	0.8	0.2 <	1 <
JUN	2	ERR	8.23	87	95	1 <	11.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.23	138	153	2	73.0	1.1	1 <
Min		ERR	7.70	78	89	1 <	0.5 <	0.2 <	1 <
Mean		ERR	7.96	111	122	1 <	9.6	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.0 X	0.1 X	0.1 X	0.0 X
Acute Criterion	0.0 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 15 Clark Fork below Milltown Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	1300.0	(M)	8.06	117	145	16	22.0		2
Aug 15	655.0	(M)	8.05	117	148	2	15.0		1 <
Sep 13	729.0	(M)	7.99	128	162	2	4.4		1 <
Oct 11	899.0	(M)	7.82	141	182	2	5.0	0.2 <	1 <
Nov 15	1220.0	(M)	7.48	135	175	1	5.0	0.2 <	1 <
Dec 13	1230.0	(E)	7.89	131	176	2	10.0	0.2	1 <
Jan 17	.		7.80	124	165	2	21.0	0.2 <	1 <
Mar 22			7.87	117	160	14	24.0	0.4	2
Apr 5			7.88	120	158	8	7.0	0.2 <	1
Apr 18			7.57	77	97	6	15.0	0.2 <	2
May 2			7.80	77	96	4	8.0	0.2 <	1
May 16			7.78	73	89	6	11.0	0.2 <	1 <
May 30			8.20	85	102	4	6.0	0.2 <	1 <
Jun 13			8.16	77	90	4	15.0	0.2 <	1 <
Jun 27			8.23	115	100	4	14.0	0.2 <	1 <
N=	6		15	15	15	15	15	12	15
Max	1300.0		8.23	141	182	16	24.0	0.4	2
Min	655.0		7.48	73	89	1	4.4	0.2 <	1 <
Mean	1005.5		7.91	109	136	5	12.2	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 15 Clark Fork below Milltown Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	1197.0	8.06	117	145	16	22.0		2
AUG	1	627.0	8.05	117	148	2	15.0		1 <
SEP	1	694.0	7.99	128	162	2	4.4		1 <
OCT	1	899.0	7.82	141	182	2	5.0	0.2 <	1 <
NOV	1	1991.0	7.48	135	175	1	5.0	0.2 <	1 <
DEC	1	1230.0	7.89	131	176	2	10.0	0.2	1 <
JAN	1	ERR	7.80	124	165	2	21.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.87	117	160	14	24.0	0.4	2
APR	2	ERR	7.73	99	128	7	11.0	0.2 <	2
MAY	3	ERR	7.93	78	96	5	8.3	0.2 <	1 <
JUN	2	ERR	8.20	96	95	4	14.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.20	141	182	16	24.0	0.4	2
Min		ERR	7.48	78	95	1	4.4	0.2 <	1 <
Mean		ERR	7.89	117	148	5	12.7	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

	Cu	Zn	Cd	Pb
Frequency of Exceedence				
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%
Magnitude of Exceedence				
Chronic Criterion	0.3 x	0.1 x	0.0 x	0.1 x
Acute Criterion	0.2 x	0.1 x	0.0 x	0.0 x
METALS SEVERITY SCORE				
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGHAN

Monitoring Station: 16 Clark Fork above Missoula WWTP

Instantaneous Values

Date	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	1300.0 (E)	8.07	113	143	14	18.0		2
Aug 16	655.0 (E)	8.06	116	146	3	7.9		1 <
Sep 13	729.0 (E)	8.09	126	160	2	10.0		1 <
Oct 11	899.0 (E)	7.95	139	180	2	4.4	0.2 <	1 <
Nov 15	1220.0 (E)	7.88	130	170	1	6.6	0.2 <	1
Dec 13	1230.0 (E)	8.00	129	173	3	53.0	0.2 <	1 <
Jan 17		7.96	120	165	4	18.0	0.2 <	1 <
Mar 22		7.87	115	158	14	25.0	0.2 <	2
Apr 5		7.91	118	158	10	10.0	0.2 <	1
Apr 18		7.28	74	94	6	7.0	0.2 <	2
May 2		7.81	76	93	5	10.0	0.2 <	1 <
May 16		7.88	69	83	6	34.0	1.1	1
May 30		8.23	81	97	3	5.0	0.2 <	1 <
Jun 13		8.15	71	84	4	14.0	0.2 <	1
Jun 27		8.29	95	111	4	9.0	0.2 <	1 <
N=	6	15	15	15	15	15	12	15
Max	1300.0	8.29	139	180	14	53.0	1.1	2
Min	655.0	7.28	69	83	1	4.4	0.2 <	1 <
Mean	1005.5	7.96	105	134	5	15.5	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 16 Clark Fork above Missoula WWTP

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	1197.0	8.07	113	143	14	18.0		2
AUG	1	627.0	8.06	116	146	3	7.9		1 <
SEP	1	694.0	8.09	126	160	2	10.0		1 <
OCT	1	899.0	7.95	139	180	2	4.4	0.2 <	1 <
NOV	1	1991.0	7.88	130	170	1	6.6	0.2 <	1
DEC	1	1230.0	8.00	129	173	3	53.0	0.2 <	1 <
JAN	1	ERR	7.96	120	165	4	18.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.87	115	158	14	25.0	0.2 <	2
APR	2	ERR	7.60	96	126	8	8.5	0.2 <	2
MAY	3	ERR	7.97	75	91	5	16.3	0.4	1 <
JUN	2	ERR	8.22	83	98	4	11.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.22	139	180	14	53.0	0.4	2
Min		ERR	7.60	75	91	1	4.4	0.2 <	1 <
Mean		ERR	7.97	113	146	5	16.3	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

	Cu	Zn	Cd	Pb
Frequency of Exceedence				
Chronic Criterion	0%	0%	4%	0%
Acute Criterion	0%	0%	0%	0%
Magnitude of Exceedence				
Chronic Criterion	0.3 X	0.1 X	0.0 X	0.1 X
Acute Criterion	0.2 X	0.1 X	0.0 X	0.0 X
METALS SEVERITY SCORE				
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 17 Missoula WWTP discharge

Instantaneous Values

Date	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	11.9 (I)	7.27	184	174	15	45.0		1
Aug 16	12.3 (I)	7.93	212	174	4	39.0		1
Sep 13	11.6 (I)	7.16	162	174	9	47.0		1
Oct 11	10.8 (I)	7.20	211	180	6	34.0	0.2 <	1 <
Nov 15	11.2 (I)	7.24	241	180	19	40.0	0.2 <	3
Dec 13	11.2 (I)	7.35	221	182	11	46.0	0.2 <	2
Jan 17		7.29	248	177	10	44.0	0.2 <	1
Mar 22		7.47	272	183	9	43.0	0.2 <	1
Apr 5		7.52	248	181	7	28.0	0.2 <	1
Apr 18		7.24	241	173	6	42.0	0.2 <	2
May 2		7.84	244	172	10	44.0	0.2 <	2
May 16		7.30	222	172	5	39.0	0.2 <	1 <
May 30		7.53	233	175	8	23.0	0.2 <	1 <
Jun 13		7.44	149	169	9	47.0	0.2 <	1
Jun 27		7.30	165	165	14	58.0	0.2	1
N=	6	15	15	15	15	15	12	15
Max	12.3	7.93	272	183	19	58.0	0.2	3
Min	10.8	7.16	149	165	4	23.0	0.2 <	1 <
Mean	11.5	7.41	217	175	9	41.3	0.2 <	1

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 17 Missoula WWTP discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	9.3	7.27	184	174	13	45.0		1
AUG	1	9.4	7.93	212	174	4	39.0		1
SEP	1	9.2	7.16	162	174	9	47.0		1
OCT	1	8.9	7.20	211	180	6	34.0	0.2 <	1 <
NOV	1	8.7	7.24	241	180	19	40.0	0.2 <	3
DEC	1	8.8	7.35	221	182	11	46.0	0.2 <	2
JAN	1	ERR	7.29	248	177	10	44.0	0.2 <	1
FEB	.0								
MAR	1	ERR	7.47	272	183	9	43.0	0.2 <	1
APR	2	ERR	7.38	245	177	7	35.0	0.2 <	2
MAY	3	ERR	7.56	233	173	8	35.3	0.2 <	1 <
JUN	2	ERR	7.37	157	167	12	52.5	0.2 <	1
N=		11	11	11	11	11	11	8	11
Max		ERR	7.93	272	183	19	52.5	0.2 <	3
Min		ERR	7.16	157	167	4	34.0	0.2 <	1 <
Mean		ERR	7.38	217	176	10	41.9	0.2 <	1
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.5 X	0.2 X	0.0 X	0.2 X
Acute Criterion	0.3 X	0.2 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 18 Clark Fork at Shuffield's

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 12	1300.0	(E)	8.09	114	144	14	20.0		3
Aug 16	652.0	(E)	8.09	118	147	2	6.1		1 <
Sep 13	729.0	(E)	8.05	124	161	4	6.0		1 <
Oct 11	899.0	(E)	7.99	140	181	2	5.0	0.2 <	1 <
Nov 15	1220.0	(E)	7.89	130	173	2	6.4	0.2 <	1 <
Dec 13	1230.0	(E)	7.66	130	175	2	9.0	0.2 <	1 <
Jan 17			7.93	122	162	5	45.0	0.3	1
Mar 23			7.64	114	156	20	30.0	0.2 <	4
Apr 5			7.92	119	159	2	2.6	0.2 <	1 <
Apr 18				76	96	6	14.0	1.4	2
May 2			7.32	74	97	5	8.0	0.2 <	2
May 16			8.05	73	85	1 <	14.0	0.2 <	3
May 30			8.22	83	100	3	6.0	0.2 <	1 <
Jun 13			8.05	72	89	4	10.0	0.2 <	1 <
Jun 27			8.24	97	112	4	71.0	0.2 <	1 <
N=	6		14	15	15	15	15	12	15
Max	1300.0		8.24	140	181	20	71.0	1.4	4
Min	652.0		7.32	72	85	1 <	2.6	0.2 <	1 <
Mean	1005.0		7.94	106	136	5	16.9	0.2 <	1

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 18 Clark Fork at Shuffield's

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	1197.0	8.09	114	144	14	20.0		3
AUG	1	627.0	8.09	118	147	2	6.1		1 <
SEP	1	694.0	8.05	124	161	4	6.0		1 <
OCT	1	899.0	7.99	140	181	2	5.0	0.2 <	1 <
NOV	1	1220.0	7.89	130	173	2	6.4	0.2 <	1 <
DEC	1	1230.0	7.66	130	175	2	9.0	0.2 <	1 <
JAN	1	ERR	7.93	122	162	5	45.0	0.3	1
FEB	0								
MAR	1	ERR	7.64	114	156	20	30.0	0.2 <	4
APR	2	ERR	7.92	98	128	4	8.3	0.7	1
MAY	3	ERR	7.86	77	94	3	9.3	0.2 <	2
JUN	2	ERR	8.15	85	101	4	40.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.15	140	181	20	45.0	0.7	4
Min		ERR	7.64	77	94	2	5.0	0.2 <	1 <
Mean		ERR	7.93	114	147	6	16.9	0.2 <	1
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	9%	0%	6%	3%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.3 X	0.1 X	0.1 X	0.2 X
Acute Criterion	0.2 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.03	0.00	0.01	0.01
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.04
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 19 Bitterroot River near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13	780.0	(E)	7.70	77	74	1 <	2.5		1 <
Aug 16	398.0	(E)	7.90	97	96	1 <	0.6		1 <
Sep 13	361.0	(E)	8.09	100	97	1 <	0.8		1 <
Oct 11	451.0	(E)	7.99	92	90	1 <	0.5 <	0.2 <	1 <
Nov 16	750.0	(E)	7.55	67	66	1 <	3.2	0.2 <	1 <
Dec 13	810.0	(E)	6.75	65	62	1 <	12.0	0.2 <	1 <
Jan 17									
Mar 22			7.33	57	53	1	2.1	0.2 <	1 <
Apr 5			7.36	59	54	1 <	3.4	0.2 <	1 <
Apr 18			7.05	27	24	5	7.0	0.2 <	1 <
May 2			7.44	33	29	1 <	0.5 <	0.2 <	1 <
May 16			7.57	25	24	1 <	1.0	0.2 <	1 <
May 30			7.58	32	26	1 <	0.6	0.2 <	1 <
Jun 14			7.64	19	19	1 <	12.0	0.2 <	1 <
Jun 27			7.92	34	30	1 <	0.8	0.2 <	1 <
N=	6		14	14	14	14	14	11	14
Max	810.0		8.09	100	97	5	12.0	0.2 <	1 <
Min	361.0		6.75	19	19	1 <	0.5 <	0.2 <	1 <
Mean	591.7		7.56	56	53	1 <	3.3	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 19 Bitterroot River near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	907.0	7.70	77	74	1 <	2.5		1 <
AUG	1	370.0	7.90	97	96	1 <	0.6		1 <
SEP	1	383.0	8.09	100	97	1 <	0.8		1 <
OCT	1	451.0	7.99	92	90	1 <	0.5 <	0.2 <	1 <
NOV	1	750.0	7.55	67	66	1 <	3.2	0.2 <	1 <
DEC	1	810.0	6.75	65	62	1 <	12.0	0.2 <	1 <
JAN	0								
FEB	0								
MAR	1	ERR	7.33	57	53	1	2.1	0.2 <	1 <
APR	2	ERR	7.21	43	39	3	5.2	0.2 <	1 <
MAY	3	ERR	7.53	30	26	1 <	0.5	0.2 <	1 <
JUN	2	ERR	7.78	27	25	1 <	6.4	0.2 <	1 <
N=		10	10	10	10	10	10	7	10
Max		ERR	8.09	100	97	3	12.0	0.2 <	1 <
Min		ERR	6.75	27	25	1 <	0.5 <	0.2 <	1 <
Mean		ERR	7.58	65	63	1 <	3.3	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

	Cu	Zn	Cd	Pb
Frequency of Exceedence				
Chronic Criterion	5%	0%	0%	0%
Acute Criterion	5%	0%	0%	0%
Magnitude of Exceedence				
Chronic Criterion	0.1 X	0.1 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.1 X	0.0 X	0.0 X
METALS SEVERITY SCORE				
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 20 Clark Fork at Harper Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13	2040.0	(M)	7.82	103	117	4	8.7		1 <
Aug 16	1050.0	(M)	8.14	110	126	1 <	1.9		1 <
Sep 13	1090.0	(M)	8.30	114	132	1 <	2.4		1 <
Oct 12	1320.0	(M)	7.64	125	150	1 <	7.7	0.2 <	1 <
Nov 16	1990.0	(M)	7.64	107	132	1 <	8.5	0.2 <	1 <
Dec 14	2200.0	(M)	7.89	106	130	1 <	5.0	0.2 <	1 <
Jan 18	1860.0	(M)	7.77	106	127	2	12.0	0.3	1 <
Mar 23		(M)	7.62	95	118	9	17.0	0.2 <	2
Apr 6		(M)	7.80	99	131	5	23.0	0.2 <	1 <
Apr 18		(M)		63	76	6	22.0	0.2 <	1
May 2		(M)	7.41	67	84	4	7.0	0.2 <	1
May 16		(M)	8.04	65	73	5	21.0	0.2 <	2
May 30		(M)	8.18	68	77	2	4.0	0.2 <	1 <
Jun 14		(M)	7.89	56	66	2	7.0	0.2 <	1
Jun 28		(M)	8.03	72	81	3	6.0	0.2 <	1 <
N=	7		14	15	15	15	15	12	15
Max	2200.0		8.30	125	150	9	23.0	0.3	2
Min	1050.0		7.41	56	66	1 <	1.9	0.2 <	1 <
Mean	1650.0		7.87	90	108	3	10.2	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 20 Clark Fork at Harper Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	2104.0	7.82	103	117	4	8.7		1 <
AUG	1	997.0	8.14	110	126	1 <	1.9		1 <
SEP	1	1077.0	8.30	114	132	1 <	2.4		1 <
OCT	1	1320.0	7.64	125	150	1 <	7.7	0.2 <	1 <
NOV	1	1990.0	7.64	107	132	1 <	8.5	0.2 <	1 <
DEC	1	2200.0	7.89	106	130	1 <	5.0	0.2 <	1 <
JAN	1	1860.0	7.77	106	127	2	12.0	0.3	1 <
FEB	0								
MAR	1	ERR	7.62	95	118	9	17.0	0.2 <	2
APR	2	ERR	7.80	81	104	6	22.5	0.2 <	1 <
MAY	3	ERR	7.88	67	78	4	10.7	0.2 <	1
JUN	2	ERR	7.96	64	74	3	6.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.30	125	150	9	22.5	0.3	2
Min		ERR	7.62	64	74	1 <	1.9	0.2 <	1 <
Mean		ERR	7.86	98	117	2	9.4	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.2 X	0.1 X	0.0 X	0.1 X
Acute Criterion	0.1 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 21 Stone Container Corporation Discharge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13	0.0	(I)							
Aug 16	0.0	(I)							
Sep 13	0.0	(I)							
Oct 12	0.0	(I)							
Nov 16	2.8	(I)	8.06	300	130	1 <	7.8	0.2 <	1 <
Dec 14	4.4	(I)	8.08	685	135	1 <	4.2	0.2 <	1 <
Jan 18	0.0	(I)							
Mar 23	5.1	(I)	8.40	746	118	1 <	6.0	0.2 <	1
Apr 5	18.8	(I)	8.07	672	104	1 <	4.6	0.3	1 <
Apr 18	66.8	(I)		603	112	1 <	5.0	0.2 <	1 <
May 2	50.2	(I)	7.72	626	140	1 <	11.0	0.2 <	1 <
May 16	31.3	(I)	8.33	673	139	1 <	14.0	0.2 <	1 <
May 30	18.6	(I)	8.29	715	140	1 <	24.0	0.2 <	1 <
Jun 14	13.2	(I)	8.11	692	166	1 <	23.0	0.2 <	1 <
Jun 28	13.37	(I)	8.28	660	155	2	20.0	0.2	1 <
N=	15		9	10	10	10	10	10	10
Max	66.8		8.40	746	166	2	24.0	0.3	1
Min	0.0		7.72	300	104	1 <	4.2	0.2 <	1 <
Mean	15.0		8.15	637	134	1 <	12.0	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 21 Stone Container Corporation Discharge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	0	1.1							
AUG	0	0.0							
SEP	0	0.0							
OCT	0	0.9							
NOV	1	1.9	8.06	300	130	1 <	7.8	0.2 <	1 <
DEC	1	0.6	8.08	685	135	1 <	4.2	0.2 <	1 <
JAN	0	0.0							
FEB	0	0.0							
MAR	1	14.6	8.40	746	118	1 <	6.0	0.2 <	1
APR	2	55.9	8.07	638	108	1 <	4.8	0.2 <	1 <
MAY	3	53.6	8.11	671	140	1 <	16.3	0.2 <	1 <
JUN	2	20.1	8.20	676	161	1	21.5	0.2 <	1 <
N=		12	6	6	6	6	6	6	6
Max		55.9	8.40	746	161	1	21.5	0.2 <	1
Min		0.0	8.06	300	108	1 <	4.2	0.2 <	1 <
Mean		12.4	8.15	619	132	1 <	10.1	0.2 <	1 <
Annual Metals Load (tons/year)						0.00	0.14	0.00	0.00

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.0 X	0.1 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 22 Clark Fork at Huson

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13	2040.0	(E)	7.91	105	118	5	7.5		1 <
Aug 16	1050.0	(E)	8.16	117	129	1 <	1 9		1 <
Sep 13	1090.0	(E)	8.32	120	137	2	3.2		1 <
Oct 12	1320.0	(E)	7.69	130	150	1 <	2.3	0.2 <	1 <
Nov 16	1990.0	(E)	7.66	112	134	2	4.4	0.2 <	1 <
Dec 14	2200.0	(E)	8.18	109	133	1	6.2	0.2 <	1 <
Jan 18	1860.0	(E)	7.81	112	130	2	35.0	0.2 <	1 <
Mar 23		(E)	7.63	100	120	7	14.0	0.2 <	2
Apr 6		(E)	7.78	105	133	4	19.0	0.2 <	1
Apr 18		(E)		61	70	6	17.0	0.2 <	2
May 2		(E)	7.42	65	80	4	6.0	0.2 <	1 <
May 16		(E)	8.18	62	68	5	13.0	0.2 <	1
May 31		(E)	7.53	66	72	2	8.0	0.2 <	1 <
Jun 14		(E)	7.77	51	59	2	9.0	0.2 <	1 <
Jun 28		(E)	8.09	71	78	2	3.0	0.2 <	1 <
N=	7		14	15	15	15	15	12	15
Max	2200.0		8.32	130	150	7	35.0	0.2 <	2
Min	1050.0		7.42	51	59	1 <	1.9	0.2 <	1 <
Mean	1650.0		7.87	92	107	3	10.0	0.2 <	1 <

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 22 Clark Fork at Huson

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	2104.0	7.91	105	118	5	7.5		1 <
AUG	1	997.0	8.16	117	129	1 <	1.9		1 <
SEP	1	1077.0	8.32	120	137	2	3.2		1 <
OCT	1	1320.0	7.69	130	150	1 <	2.3	0.2 <	1 <
NOV	1	1990.0	7.66	112	134	2	4.4	0.2 <	1 <
DEC	1	2200.0	8.18	109	133	1	6.2	0.2 <	1 <
JAN	1	1860.0	7.81	112	130	2	35.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.63	100	120	7	14.0	0.2 <	2
APR	2	ERR	7.78	83	102	5	18.0	0.2 <	2
MAY	3	ERR	7.71	64	73	4	9.0	0.2 <	1 <
JUN	2	ERR	7.93	61	69	2	6.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.32	130	150	7	35.0	0.2 <	2
Min		ERR	7.63	61	69	1 <	1.9	0.2 <	1 <
Mean		ERR	7.89	101	118	3	9.8	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.2 X	0.1 X	0.0 X	0.1 X
Acute Criterion	0.1 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 23 Clark Fork near Alberton

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13	2040.0	(E)	8.01	102	115	2	4.5		1 <
Aug 16	1050.0	(E)	8.11	116	127	1 <	1.8		1 <
Sep 14	1130.0	(E)	8.05	119	137	1	2.7		1 <
Oct 12	1320.0	(E)	7.81	126	147	1 <	2.7	0.2 <	1 <
Nov 16	1990.0	(E)	7.86	111	133	1 <	3.9	0.2 <	1 <
Dec 14	2200.0	(E)	8.25	110	133	1 <	23.0	0.2 <	1 <
Jan 18	1860.0	(E)	7.63	111	130	1 <	6.0	0.2 <	1 <
Mar 23		(E)	7.60	96	116	7	11.0	0.2 <	1
Apr 6		(E)	7.64	101	129	4	17.0	0.2 <	1 <
Apr 18		(E)		58	67	5	15.0	0.2 <	1
May 2		(E)	7.51	64	79	4	4.0	0.2 <	1 <
May 16		(E)	8.05	60	66	5	12.0	0.2 <	1
May 31		(E)	7.93	64	71	2	3.7	0.2 <	1 <
Jun 14		(E)	7.72	50	57	2	8.0	0.2 <	1 <
Jun 28		(E)	8.10	69	77	2	3.0	0.2 <	1 <
N=	7		14	15	15	15	15	12	15
Max	2200.0		8.25	126	147	7	23.0	0.2 <	1
Min	1050.0		7.51	50	57	1 <	1.8	0.2 <	1 <
Mean	1655.7		7.88	90	106	2	7.9	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 23 Clark Fork near Alberton

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	2104.0	8.01	102	115	2	4.5		1 <
AUG	1	997.0	8.11	116	127	1 <	1.8		1 <
SEP	1	1077.0	8.05	119	137	1	2.7		1 <
OCT	1	1320.0	7.81	126	147	1 <	2.7	0.2 <	1 <
NOV	1	1990.0	7.86	111	133	1 <	3.9	0.2 <	1 <
DEC	1	2200.0	8.25	110	133	1 <	23.0	0.2 <	1 <
JAN	1	1860.0	7.63	111	130	1 <	6.0	0.2 <	1 <
FEB	0								
MAR	1	ERR	7.60	96	116	7	11.0	0.2 <	1
APR	2	ERR	7.64	80	98	5	16.0	0.2 <	1 <
MAY	3	ERR	7.83	63	72	4	6.6	0.2 <	1 <
JUN	2	ERR	7.91	60	67	2	5.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.25	126	147	7	23.0	0.2 <	1
Min		ERR	7.60	60	67	1 <	1.8	0.2 <	1 <
Mean		ERR	7.88	99	116	2	7.6	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.2 X	0.1 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 24 Clark Fork at Superior

Instantaneous Values

Date	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 13		8.36	100	109	2	3.9		1 <
Aug 17		8.03	115	127	1 <	1.0		1 <
Sep 14		8.00	118	135	2	4.8		1 <
Oct 12		7.86	124	141	1 <	1.7	0.2 <	1 <
Nov 16		7.96	109	127	1 <	1.7	0.2 <	1 <
Dec 14		8.43	108	128	1 <	47.0	0.2 <	1 <
Jan 18		7.86	108	126	1 <	9.0	0.2 <	1 <
Mar 23		7.83	96	111	4	7.0	0.2 <	1 <
Apr 6		7.89	100	126	2	13.0	0.2 <	1 <
Apr 18			59	68	7	35.0	0.2 <	2
May 2		7.56	66	79	4	4.0	0.2 <	1
May 16		7.71	62	67	3	10.0	0.2 <	1 <
May 31		8.09	64	71	2	4.0	0.2 <	1 <
Jun 14		7.79	51	59	2	7.0	0.2 <	1 <
Jun 28		8.28	70	77	2	4.0	0.2 <	1 <
N=	0	14	15	15	15	15	12	15
Max	ERR	8.43	124	141	7	47.0	0.2 <	2
Min	ERR	7.56	51	59	1 <	1.0	0.2 <	1 <
Mean	ERR	7.98	90	103	2	10.2	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 24 Clark Fork at Superior

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1		8.36	100	109	2	3.9		1 <
AUG	1		8.03	115	127	1 <	1.0		1 <
SEP	1		8.00	118	135	2	4.8		1 <
OCT	1		7.86	124	141	1 <	1.7	0.2 <	1 <
NOV	1		7.96	109	127	1 <	1.7	0.2 <	1 <
DEC	1		8.43	108	128	1 <	47.0	0.2 <	1 <
JAN	1		7.86	108	126	1 <	9.0	0.2 <	1 <
FEB	0								
MAR	1		7.83	96	111	4	7.0	0.2 <	1 <
APR	2		7.89	80	97	5	24.0	0.2 <	1
MAY	3		7.79	64	72	3	6.0	0.2 <	1 <
JUN	2		8.04	61	68	2	5.5	0.2 <	1 <
N=		0	11	11	11	11	11	8	11
Max		ERR	8.43	124	141	5	47.0	0.2 <	1
Min		ERR	7.79	61	68	1 <	1.0	0.2 <	1 <
Mean		ERR	8.00	98	113	2	10.1	0.2 <	1 <
Annual Metals Load (tons/year)						0.00	0.00	0.00	0.00

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	5%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.1 X	0.1 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 25 Clark Fork above Flathead River

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	3090.0	(M)	8.00	98	105	1	1.1		1 <
Aug 17	1570.0	(M)	8.14	108	117	1 <	1.4		1 <
Sep 14	1520	(M)	7.99	113	127	1 <	2.3		1 <
Oct 12	1850.0	(M)	7.88	120	135	1 <	1.0	0.2 <	1 <
Nov 16	2640.0	(M)	7.39	106	121	1	1.2	0.2	1 <
Dec 14	2800.0	(M)	8.35	101	119	1 <	1.0	0.2 <	1 <
Jan 18	2340.0	(M)	7.90	104	156	1 <	1.4	0.2	1 <
Mar 23		(M)	7.78	94	108	4	10.0	0.2 <	1 <
Apr 6		(M)	7.98	93	117	3	9.0	0.2 <	1 <
Apr 19		(M)		55	64	6	19.0	0.2 <	2
May 3		(M)	7.55	60	73	3	4.0	0.2 <	1
May 17		(M)	8.05	59	65	4	8.0	0.2 <	1 <
May 31		(M)	8.03	62	68	2	2.4	0.2 <	1 <
Jun 14		(M)	8.04	52	56	2	5.0	0.2 <	1 <
Jun 28		(M)	8.22	71	76	1	4.0	0.2 <	1 <
N=	7		14	15	15	15	15	12	15
Max	3090.0		8.35	120	156	6	19.0	0.2	2
Min	1520.0		7.39	52	56	1 <	1.0	0.2 <	1 <
Mean	2258.6		7.95	86	100	2	4.7	0.2 <	1 <

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 25 Clark Fork above Flathead River

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	3098.0	8.00	98	105	1	1.1		1 <
AUG	1	1523.0	8.14	108	117	1 <	1.4		1 <
SEP	1	1521.0	7.99	113	127	1 <	2.3		1 <
OCT	1	2201.0	7.88	120	135	1 <	1.0	0.2 <	1 <
NOV	1	2634.0	7.39	106	121	1	1.2	0.2	1 <
DEC	1	2338.0	8.35	101	119	1 <	1.0	0.2 <	1 <
JAN	1	2331.0	7.90	104	156	1 <	1.4	0.2	1 <
FEB	0								
MAR	1	ERR	7.78	94	108	4	10.0	0.2 <	1 <
APR	2	ERR	7.98	74	91	5	14.0	0.2 <	1
MAY	3	ERR	7.88	60	69	3	4.8	0.2 <	1 <
JUN	2	ERR	8.13	62	66	2	4.5	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.35	120	156	5	14.0	0.2	1
Min		ERR	7.39	60	66	1 <	1.0	0.2 <	1 <
Mean		ERR	7.95	95	110	1	3.9	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	5%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.1 X	0.0 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 26 Flathead River near mouth

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	5560.0	(M)	7.94	85	89	1 <	0.5 <		1 <
Aug 17	3990.0	(E)	8.41	83	87	1 <	0.5 <		1 <
Sep 14	3920.0	(M)	8.13	83	91	1 <	3.1		1 <
Oct 12	8490.0	(M)	7.81	85	94	1 <	1.0	0.2 <	1 <
Nov 16	11400.0	(M)	7.53	85	94	1 <	0.5 <	0.2 <	1 <
Dec 14	9990.0	(M)	8.16	86	94	1 <	1.2	0.2 <	1 <
Jan 18	9420.0	(M)	7.73	85	93	1 <	7.0	0.2 <	1 <
Mar 23	9420.0	(M)	7.63	55	85	2	5.0	0.2 <	2
Apr 6	7860.0	(M)	7.47	80	93	1 <	5.0	0.2 <	1 <
Apr 19	8710.0	(M)		78	84	1 <	0.6	0.2 <	1 <
May 3	11800.0	(M)	7.74	78	89	1 <	0.5 <	0.2 <	1 <
May 17	21700.0	(M)	8.10	85	91	1 <	6.0	0.2 <	1 <
May 31	12800.0	(M)	8.13	82	88	1 <	0.5 <	0.2 <	1 <
Jun 15		(M)	8.15	82	89	1 <	0.5 <	0.2 <	1 <
Jun 29		(M)	8.25	82	89	2	0.5 <	0.2 <	1 <
N=	13		14	15	15	15	15	12	15
Max	21700.0		8.41	86	94	2	7.0	0.2 <	2
Min	3920.0		7.47	55	84	1 <	0.5 <	0.2 <	1 <
Mean	9620.0		7.94	81	90	1 <	1.9	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 26 Flathead River near mouth

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	6758.0	7.94	85	89	1 <	0.5 <		1 <
AUG	1	4245.0	8.41	83	87	1 <	0.5 <		1 <
SEP	1	4978.0	8.13	83	91	1 <	3.1		1 <
OCT	1	7997.0	7.81	85	94	1 <	1.0	0.2 <	1 <
NOV	1	11400.0	7.53	85	94	1 <	0.5 <	0.2 <	1 <
DEC	1	9990.0	8.16	86	94	1 <	1.2	0.2 <	1 <
JAN	1	9420.0	7.73	85	93	1 <	7.0	0.2 <	1 <
FEB	0								
MAR	1	9420.0	7.63	55	85	2	5.0	0.2 <	2
APR	2	8285.0	7.47	79	89	1 <	2.8	0.2 <	1 <
MAY	3	15433.3	7.99	82	89	1 <	2.0	0.2 <	1 <
JUN	2	ERR	8.20	82	89	1	0.5 <	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.41	86	94	2	7.0	0.2 <	2
Min		ERR	7.47	55	85	1 <	0.5 <	0.2 <	1 <
Mean		ERR	7.91	81	90	1 <	2.0	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.0 X	0.0 X	0.0 X	0.1 X
Acute Criterion	0.0 X	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	8330.0	(M)	7.98	90	96	1	0.6		1 <
Aug 17	5370.0	(M)	8.08	95	99	1 <	0.5 <		1 <
Sep 14	5240.0	(M)	7.94	94	104	1 <	2.2		1 <
Oct 12	10300.0	(M)	7.84	91	103	1 <	4.3	0.2 <	1 <
Nov 17	13500.0	(M)	7.47	90	101	1 <	0.5 <	0.2 <	1 <
Dec 14	12700.0	(M)	8.31	91	101	1 <	6.3	0.2 <	1 <
Jan 18	11300.0	(M)	7.81	91	99	1 <	0.9	0.2 <	1 <
Mar 23	12900.0	(M)	7.76	82	96	2	5.0	0.2 <	1 <
Apr 6	11900.0	(M)	7.86	86	104	1	6.0	0.2 <	1 <
Apr 19	23300.0	(M)		66	75	4	39.0	0.2 <	2
May 3	25600.0	(M)	7.72	70	81	1	1.4	0.2 <	1 <
May 17	41400.0	(M)	8.14	73	79	1 <	3.3	0.2 <	1 <
May 31	26400.0	(M)	8.22	73	79	1 <	4.0	0.2 <	1 <
Jun 14		(M)	8.12	72	78	1 <	2.5	0.8	1 <
Jun 28		(M)	8.39	78	85	3	4.0	0.2 <	1 <
N=	13		14	15	15	15	15	12	15
Max	41400.0		8.39	95	104	4	39.0	0.8	2
Min	5240.0		7.47	66	75	1 <	0.5 <	0.2 <	1 <
Mean	16018.5		7.97	83	92	1 <	5.3	0.2 <	1 <

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 27 Clark Fork above Thompson Falls Reservoir

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	9733.0	7.98	90	96	1	0.6		1 <
AUG	1	5656.0	8.08	95	99	1 <	0.5 <		1 <
SEP	1	6291.0	7.94	94	104	1 <	2.2		1 <
OCT	1	9958.0	7.84	91	103	1 <	4.3	0.2 <	1 <
NOV	1	12580.0	7.47	90	101	1 <	0.5 <	0.2 <	1 <
DEC	1	11780.0	8.31	91	101	1 <	6.3	0.2 <	1 <
JAN	1	11300.0	7.81	91	99	1 <	0.9	0.2 <	1 <
FEB	0								
MAR	1	12900.0	7.76	82	96	2	5.0	0.2 <	1 <
APR	2	17600.0	7.86	76	90	3	22.5	0.2 <	1
MAY	3	31133.3	8.03	72	80	1 <	2.9	0.2 <	1 <
JUN	2	ERR	8.26	75	82	2	3.3	0.4	1 <
N=		11	11	11	11	11	11	8	11
Max		ERR	8.31	95	104	3	22.5	0.4	1
Min		ERR	7.47	72	80	1 <	0.5 <	0.2 <	1 <
Mean		ERR	7.94	86	95	1 <	4.4	0.2 <	1 <
Annual Metals Load (tons/year)						ERR	ERR	ERR	ERR

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.1 X	0.0 X	0.1 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 28 Clark Fork below Thompson Falls Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	8710.0	(M)	8.04	89	94	1 <	1.1		1 <
Aug 18	5560.0	(M)	8.02	92	98	1 <	1.0		1 <
Sep 15	5541.0	(M)	7.89	92	102	1 <	1.1		1 <
Oct 13	10124.0	(M)	7.78	91	102	1 <	4.0	0.2 <	1 <
Nov 17	13337.0	(M)	7.72	90	102	1 <	1.0	0.2 <	1 <
Dec 14	13058.0	(M)	8.25	90	101	1 <	0.5 <	0.2 <	1 <
Jan 18	11382.0	(M)	7.86	90	97	1 <	1.4	0.2 <	1 <
Mar 23	13281.0	(M)	7.75	81	95	1	3.1	0.2 <	1 <
Apr 6	12208.0	(M)	7.85	85	103	1	6.0	0.2 <	1 <
Apr 19	27946.0	(M)		61	71	3	14.0	0.2 <	1
May 3	27726.0	(M)	7.74	67	79	2	13.0	0.2	1 <
May 17	47931.0	(M)	8.16	72	78	3	7.0	0.2 <	1 <
May 31		(M)	8.22	72	78	1	1.6	0.2 <	1 <
Jun 15		(M)	8.09	70	77	1	3.5	0.2 <	1 <
Jun 28		(M)	8.28	78	84	1 <	0.7	0.2 <	1 <
N=	12		14	15	15	15	15	12	15
Max	47931.0		8.28	92	103	3	14.0	0.2	1
Min	5541.0		7.72	61	71	1 <	0.5 <	0.2 <	1 <
Mean	16400.3		7.98	81	91	1 <	3.9	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 28 Clark Fork below Thompson Falls Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCo3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	10264.0	8.04	89	94	1 <	1.1		1 <
AUG	1	6013.0	8.02	92	98	1 <	1.0		1 <
SEP	1	6545.0	7.89	92	102	1 <	1.1		1 <
OCT	1	10334.0	7.78	91	102	1 <	4.0	0.2 <	1 <
NOV	1	12618.0	7.72	90	102	1 <	1.0	0.2 <	1 <
DEC	1	12019.0	8.25	90	101	1 <	0.5 <	0.2 <	1 <
JAN	1	8999.0	7.86	90	97	1 <	1.4	0.2 <	1 <
FEB	0	9724.0							
MAR	1	13252.0	7.75	81	95	1	3.1	0.2 <	1 <
APR	2	23950.0	7.85	73	87	2	10.0	0.2 <	1 <
MAY	3	38296.0	8.04	70	78	2	7.2	0.2 <	1 <
JUN	2	37185.0	8.19	74	81	1 <	2.1	0.2 <	1 <
N=		12	11	11	11	11	11	8	11
Max		38296.0	8.25	92	102	2	10.0	0.2 <	1 <
Min		6013.0	7.72	70	78	1 <	0.5 <	0.2 <	1 <
Mean		15766.6	7.94	85	94	1 <	2.9	0.2 <	1 <
Annual Metals Load (tons/year)						11.38	59.70	0.00	0.00

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.0 X	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 29 Clark Fork at Noxon Bridge

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	10300.0	(M)	7.83	78	82	1 <	0.5 <		1 <
Aug 18	5090.0	(M)	7.78	87	93	1 <	0.5 <		1 <
Sep 15	4100.0	(M)	7.75	88	96	1 <	0.5		1 <
Oct 12	10700.0	(M)	7.73	92	102	1 <	0.5 <	0.2 <	1 <
Nov 17	15500.0	(M)	7.69	92	101	1 <	0.5 <	0.2 <	1 <
Dec 15	19200.0	(M)	8.23	92	102	1 <	0.5 <	0.2 <	1 <
Jan 19	9620.0	(M)	7.12	90	95	1 <	41.0	0.2 <	1 <
Mar 23	9530.0	(M)	7.70	82	91	13	7.0	0.2 <	1
Apr 6	4990.0	(M)	7.73	80	101	2	21.0	0.2 <	1 <
Apr 19	26700.0	(M)		72	80	2	20.0	0.2 <	1 <
May 3	29900.0	(M)	7.58	58	68	1 <	11.0	0.2 <	1 <
May 17	42300.0	(M)	8.10	60	66	1	3.0	0.2 <	1 <
May 31	26100.0	(M)	8.14	69	74	1 <	6.0	0.2 <	1 <
Jun 15	50700.0	(M)	8.02	64	70	1	0.8	0.2 <	1 <
Jun 28	24000.0	(M)	8.14	70	77	1	0.5 <	0.2 <	1 <
N=	15		14	15	15	15	15	12	15
Max	50700.0		8.23	92	102	13	41.0	0.2 <	1
Min	4100.0		7.12	58	66	1 <	0.5 <	0.2 <	1 <
Mean	19248.7		7.82	78	87	1	7.4	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 29 Clark Fork at Noxon Bridge

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCo3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	9671.0	7.83	78	82	1 <	0.5 <		1 <
AUG	1	5350.0	7.78	87	93	1 <	0.5 <		1 <
SEP	1	5908.0	7.75	88	96	1 <	0.5		1 <
OCT	1	9477.0	7.73	92	102	1 <	0.5 <	0.2 <	1 <
NOV	1	12120.0	7.69	92	101	1 <	0.5 <	0.2 <	1 <
DEC	1	11360.0	8.23	92	102	1 <	0.5 <	0.2 <	1 <
JAN	1	8166.0	7.12	90	95	1 <	41.0	0.2 <	1 <
FEB	0	10500.0							
MAR	1	12280.0	7.70	82	91	13	7.0	0.2 <	1
APR	2	24160.0	7.73	76	91	2	20.5	0.2 <	1 <
MAY	3	38230.0	7.94	62	69	1 <	6.7	0.2 <	1 <
JUN	2	36730.0	8.08	67	74	1	0.5 <	0.2 <	1 <
N=		12	11	11	11	11	11	8	11
Max		38230.0	8.23	92	102	13	41.0	0.2 <	1
Min		5350.0	7.12	62	69	1 <	0.5 <	0.2 <	1 <
Mean		15329.3	7.78	82	90	1	6.9	0.2 <	1 <
Annual Metals Load (tons/year)						20.21	96.73	0.00	1.03

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	9%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.1 X	0.1 X	0.0 X	0.0 X
Acute Criterion	0.1 X	0.1 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.01	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.01
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 30 Clark Fork below Cabinet Gorge Dam

Instantaneous Values

Date	Streamflow (cfs)		pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
Jul 14	14400.0	(M)	7.92	75	80	1 <	12.0		1 <
Aug 18	6650.0	(M)	7.89	85	90	1 <	0.5 <		1 <
Sep 15	5900.0	(M)	7.88	87	97	1 <	1.2		1 <
Oct 12	13400.0	(M)	7.67	92	101	1 <	1.6	0.2 <	1 <
Nov 17	17700.0	(M)	7.70	90	102	1 <	0.6	0.2 <	1 <
Dec 15	22500.0	(M)	8.16	91	100	1 <	7.5	0.2 <	1 <
Jan 19	11000.0	(M)	7.44	88	94	1 <	0.5 <	0.2 <	1 <
Mar 23	10700.0	(M)	7.73	84	93	1 <	1.6	0.2 <	1 <
Apr 6	6980.0	(M)	7.71	79	99	1	7.0	0.2 <	1 <
Apr 19	30100.0	(M)		70	81	2	2.1	0.2 <	1
May 3	35900.0	(M)	7.56	55	64	1 <	0.8	0.2 <	1 <
May 17	47100.0	(M)	8.06	59	61	1	2.7	0.2 <	1 <
May 31	33000.0	(M)	8.09	68	73	1 <	0.7	0.2 <	1 <
Jun 15	56400.0	(M)	7.97	63	68	1 <	0.9	0.2 <	1 <
Jun 28	27200.0	(M)	8.10	69	74	1	5.0	0.2 <	1 <
N=	15		14	15	15	15	15	12	15
Max	56400.0		8.16	92	102	2	12.0	0.2 <	1
Min	5900.0		7.44	55	61	1 <	0.5 <	0.2 <	1 <
Mean	22595.3		7.85	77	85	1 <	2.9	0.2 <	1 <

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Metals values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 30 Clark Fork below Cabinet Gorge Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	pH	Alkalinity (mg/l as CaCO3)	Hardness (mg/l as CaCO3)	TR Cu Conc. (ug/l)	TR Zn Conc. (ug/l)	TR Cd Conc. (ug/l)	TR Pb Conc. (ug/l)
JUL	1	11710.0	7.92	75	80	1 <	12.0		1 <
AUG	1	6765.0	7.89	85	90	1 <	0.5 <		1 <
SEP	1	7147.0	7.88	87	97	1 <	1.2		1 <
OCT	1	13400.0	7.67	92	101	1 <	1.6	0.2 <	1 <
NOV	1	17700.0	7.70	90	102	1 <	0.6	0.2 <	1 <
DEC	1	22500.0	8.16	91	100	1 <	7.5	0.2 <	1 <
JAN	1	11000.0	7.44	88	94	1 <	0.5 <	0.2 <	1 <
FEB	0								
MAR	1	10700.0	7.73	84	93	1 <	1.6	0.2 <	1 <
APR	2	18540.0	7.71	75	90	2	4.6	0.2 <	1 <
MAY	3	38666.7	7.90	61	66	1 <	1.4	0.2 <	1 <
JUN	2	41800.0	8.04	66	71	1 <	3.0	0.2 <	1 <
N=		11	11	11	11	11	11	8	11
Max		41800.0	8.16	92	102	2	12.0	0.2 <	1 <
Min		6765.0	7.44	61	66	1 <	0.5 <	0.2 <	1 <
Mean		18175.3	7.82	81	89	1 <	3.0	0.2 <	1 <
Annual Metals Load (tons/year)						2.25	51.92	0.00	0.00

Frequency of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0%	0%	0%	0%
Acute Criterion	0%	0%	0%	0%

Magnitude of Exceedence	Cu	Zn	Cd	Pb
Chronic Criterion	0.0 X	0.0 X	0.0 X	0.0 X
Acute Criterion	0.0 X	0.0 X	0.0 X	0.0 X

METALS SEVERITY SCORE	Cu	Zn	Cd	Pb
CHRONIC	0.00	0.00	0.00	0.00
ACUTE	0.00	0.00	0.00	0.00

CUMULATIVE SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

A P P E N D I X C

FY 1988

CLARK FORK BASIN

NUTRIENTS MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:00 Silver Bow Creek above Butte WWTP

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	11.3 (I)	11.0	7.00	63	73	1200	50	300	1250
Jul 27	14.6 (I)	13.9	7.10	104	114	1140	80	400	1220
Aug 11	11.4 (I)	11.7	7.55	65	78	1230	50	300	1280
Sep 14	10.9 (I)	9.5	7.20	74	99	1350	70	500	1420
Oct 13	9.5 (I)	4.0	6.60	15	91	1290	60	300	1350
Nov 16	9.0 (I)	2.8	7.40	15	84	1620	80	300	1700
Dec 15	5.6 (I)	0.5	7.00	13	92	2020	60	300	2080
Jan 12	7.6 (I)	1.3	7.40	12	86	1730	40	300	1770
Feb 9	9.6 (I)	3.3	7.60	15	92	1710	70	600	1780
Mar 8	10.2 (I)	1.3	7.45	10	94	1460	100	900	1560
Mar 29	12.3 (I)	1.9	7.35	32	110	1320	60	400	1380
Apr 12	21.8 (I)	4.4	7.60	39	138	870	30	500	900
Apr 20	28.2 (I)	6.0	7.50		195			800	
May 2	17.1 (I)	3.5	7.05	32	98	1070	30	500	1100
May 17	15.4 (I)	10.5	7.35	38	92	1100	30	400	1130
May 31	18.8 (I)	5.7	7.10	38	110	1030	60	600	1090
Jun 14	10.2 (I)	8.4	6.85	16	72	1550	50	400	1600
N=	17	15	17	16	17	16	16	17	16
Max	28.2	13.9	7.60	104	195	2020	100	900	2080
Min	5.6	0.5	6.60	10	72	870	30	300	900
Mean	13.1	5.9	7.24	36	101	1356	58	459	1413

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00 Silver Bow Creek above Butte WWTP

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	13.0	12.5	7.05	84	94	1170	65	350	1235
AUG	1	11.4	11.7	7.55	65	78	1230	50	300	1280
SEP	1	10.9	9.5	7.20	74	99	1350	70	500	1420
OCT	1	9.5	4.0	6.60	15	91	1290	60	300	1350
NOV	1	9.0	2.8	7.40	15	84	1620	80	300	1700
DEC	1	5.6	0.5	7.00	13	92	2020	60	300	2080
JAN	1	7.6	1.3	7.40	12	86	1730	40	300	1770
FEB	1	9.6	3.3	7.60	15	92	1710	70	600	1780
MAR	2	11.3	1.6	7.40	21	102	1390	80	650	1470
APR	1	25.0	5.2	7.55	39	167	870	30	650	900
MAY	2	16.3	7.0	7.20	35	95	1085	30	450	1115
JUN	2	14.5	7.1	6.98	27	91	1290	55	500	1345
N=	16	12	12	12	12	12	12	12	12	12
Max		25.0	12.5	7.60	84	167	2020	80	650	2080
Min		5.6	0.5	6.60	12	78	870	30	300	900
Mean		12.0	5.5	7.24	35	98	1396	58	433	1454
Annual Nutrient Load (tons/year)					0.44	1.23	15.16	0.63	5.45	15.79

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	92%

Magnitude of Exceedence	
Phosphorus Criterion	2.0 X
Nitrogen Criterion	1.5 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	1.95
NITROGEN	1.33
CUMULATIVE SCORE	3.28

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:00.5 Butte Metro WWTP discharge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Sep 14	9.9	(I)	16.8	6.90	3700	4050	1490	6020	7600	7510
Oct 13	8.9	(I)	15.1	6.55	3970	4310	2270	5050	6300	7320
Nov 16	8.0	(I)	12.5	7.45	3270	4190	580	8600	11200	9180
Dec 15	8.9	(I)	10.5	6.85	2680	3680	210	11200	12200	11410
Jan 12	9.1	(I)	8.7	7.30	2450	3590	160	9910	10100	10070
Feb 9	9.0	(I)	8.2	7.80	2870	4150	90	9640	12200	9730
Mar 8	13.2	(I)	8.4	7.20	2800	4730	190	9450	12900	9640
Mar 29	7.4	(I)	8.5	7.45	2910	3908	170	10940	12400	11110
Apr 12	9.1	(I)	9.5	7.40	3230	4100	130	11100	13600	11230
Apr 20	9.3	(I)	10.0	6.72	3440	4020	70	9830	11900	9900
May 2	9.2	(I)	10.3	7.40	3750	4160	90	9790	12100	9880
May 17	7.6	(I)	12.4	7.30	4290	4980	30	9910	12600	9940
May 31	8.7	(I)	11.8	7.20	2850	3770	200	8020	11900	8220
Jun 14	6.7	(I)	14.2	6.55	3860	4300	80	10500	13900	10580
N=	14		14	14	14	14	14	14	14	14
Max	13.2		16.8	7.80	4290	4980	2270	11200	13900	11410
Min	6.7		8.2	6.55	2450	3590	30	5050	6300	7320
Mean	8.9		11.2	7.15	3291	4138	411	9283	11493	9694

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00.5 Butte Metro WWTP discharge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	0	7.6								
AUG	0	7.6								
SEP	1	7.0	16.8	6.90	3700	4050	1490	6020	7600	7510
OCT	1	6.6	15.1	6.55	3970	4310	2270	5050	6300	7320
NOV	1	6.6	12.5	7.45	3270	4190	580	8600	11200	9180
DEC	1	7.6	10.5	6.85	2680	3680	210	11200	12200	11410
JAN	1	8.0	8.7	7.30	2450	3590	160	9910	10100	10070
FEB	1	8.1	8.2	7.80	2870	4150	90	9640	12200	9730
MAR	2	8.0	8.5	7.33	2855	4319	180	10195	12650	10375
APR	2	8.1	9.8	7.06	3335	4060	100	10465	12750	10565
MAY	2	8.0	11.4	7.35	4020	4570	60	9850	12350	9910
JUN	2	8.3	13.0	6.88	3355	4035	140	9260	12900	9400
N=	14	12	10	10	10	10	10	10	10	10
Max		8.3	16.8	7.80	4020	4570	2270	11200	12900	11410
Min		6.6	8.2	6.55	2450	3590	60	5050	6300	7320
Mean		7.6	11.4	7.15	3251	4095	528	9019	11025	9547
Annual Nutrient Load (tons/year)					20.16	25.49	3.02	56.88	69.44	59.91

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	100%
Magnitude of Exceedence	
Phosphorus Criterion	81.9 X
Nitrogen Criterion	9.5 X
NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	81.91
NITROGEN	9.55
CUMULATIVE SCORE	91.46

Frequency of Exceedence	
Chronic Ammonia Criterion	100%
Acute Ammonia Criterion	10%
Magnitude of Exceedence	
Chronic Ammonia Criterion	5.1 X
Acute Ammonia Criterion	0.6 X
AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	5.06
ACUTE	0.06

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:01 Silver Bow Creek below Colorado Tailings

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	19.0	(M)	12.6	6.90	1260	1360	1140	3170	3800	4310
Jul 27	26.0	(M)	15.4	7.25	1000	1130	1220	2340	2900	3560
Aug 11	25.0	(M)	14.0	7.40	1320	1360	1840	1700	2000	3540
Sep 14	21.0	(M)	12.8	7.25	1470	1580	3370	1670	2100	5040
Oct 13	23.0	(M)	6.8	6.65	1080	1300	2450	1230	2000	3680
Nov 16	20.0	(M)	5.4	7.45	987	1440	1500	2600	3300	4100
Dec 15	17.0	(M)	3.5	7.40	907	1510	1680	3800	4600	5480
Jan 12	17.0	(M)	3.4	7.35	879	1750	1430	4100	5200	5530
Feb 9	17.0	(M)	4.4	7.65	995	1580	1450	3680	5000	5130
Mar 8	20.0	(M)	3.3	7.40	799	1650	1310	3190	4500	4500
Mar 29	23.0	(M)	3.5	7.40	703	1150	1110	2660	3800	3770
Apr 12	36.0	(M)	5.8	7.60	665	1100	850	2320	3300	3170
Apr 20	50.0	(M)	6.9	6.85		928			2800	
May 2	24.0	(M)	5.1	7.55	941	1210	920	2700	3600	3620
May 17	24.0	(M)	10.3	7.45	874	1240	1130	1930	3000	3060
May 31	36.0	(M)	7.1	7.10	500	921	1020	1780	2900	2800
Jun 14	18.0	(M)	10.4	6.70	896	1250	1580	2610	3600	4190
N=	17		17	17	16	17	16	16	17	16
Max	50.0		15.4	7.65	1470	1750	3370	4100	5200	5530
Min	17.0		3.3	6.65	500	921	850	1230	2000	2800
Mean	24.5		7.7	7.26	955	1321	1500	2593	3435	4093

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 01 Silver Bow Creek below Colorado Tailings

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	34.1	14.0	7.08	1130	1245	1180	2755	3350	3935
AUG	1	27.7	14.0	7.40	1320	1360	1840	1700	2000	3540
SEP	1	22.2	12.8	7.25	1470	1580	3370	1670	2100	5040
OCT	1	21.8	6.8	6.65	1080	1300	2450	1230	2000	3680
NOV	1	20.2	5.4	7.45	987	1440	1500	2600	3300	4100
DEC	1	17.9	3.5	7.40	907	1510	1680	3800	4600	5480
JAN	1	17.2	3.4	7.35	879	1750	1430	4100	5200	5530
FEB	1	18.6	4.4	7.65	995	1580	1450	3680	5000	5130
MAR	2	22.1	3.4	7.40	751	1400	1210	2925	4150	4135
APR	1	33.9	6.4	7.23	665	1014	850	2320	3050	3170
MAY	2	27.4	7.7	7.50	908	1225	1025	2315	3300	3340
JUN	2	20.7	8.8	6.90	698	1086	1300	2195	3250	3495
N=	16	12	12	12	12	12	12	12	12	12
Max		34.1	14.0	7.65	1470	1750	3370	4100	5200	5530
Min		17.2	3.4	6.65	665	1014	850	1230	2000	3170
Mean		23.7	7.5	7.27	982	1374	1607	2608	3442	4215
Annual Nutrient Load (tons/year)					22.96	31.22	36.27	58.74	77.36	95.01

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	100%

Magnitude of Exceedence

Phosphorus Criterion	27.5 X
Nitrogen Criterion	4.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	27.48
NITROGEN	4.21
CUMULATIVE SCORE	31.70

Frequency of Exceedence

Chronic Ammonia Criterion	71%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	1.4 X
Acute Ammonia Criterion	0.2 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.97
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:02 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	17.8 (I)	13.6	7.10	720	900	1790	970	1500	2760
Jul 27	23.7 (I)	16.4	7.65	354	426	1250	130	700	1380
Aug 11	19.2 (I)	14.3	7.80	552	559	1430	80	500	1510
Sep 14	17.2 (I)	12.5	7.95	667	873	1970	50	700	2020
Oct 13	21.0 (I)	5.2	7.10	436	833	1790	160	600	1950
Nov 16	19.4 (I)	2.1	8.20	362	741	1170	1400	1600	2570
Dec 15	16.0 (E)	0.1	7.60	310	894	1510	2400	2500	3910
Jan 12	15.0 (E)	-0.1	7.65	548	1300	1570	3020	4400	4590
Feb 9	14.6 (I)	2.5	7.90	563	1170	1160	2960	3300	4120
Mar 8	20.3 (I)	2.0	7.40	363	993	1100	1880	2500	2980
Mar 29	21.1 (I)	2.4	8.00	374	903		1730	2200	1730
Apr 12	25.5 (I)	6.6	7.50	348	882	660	1440	2100	2100
Apr 20	29.7 (I)	6.8	6.75		742	950		1800	950
May 2	22.1 (I)	5.4	7.90	312	806	890	1450	2200	2340
May 17	29.2 (I)	9.9	7.35	417	859	1030	660	1400	1690
May 31	23.8 (I)	6.4	7.20	53	819	970	1080	2100	2050
Jun 14	20.3 (I)	11.4	7.75	295	692	1510	720	1400	2230
N=	17	17	17	16	17	16	1080	16	17
Max	29.7	16.4	8.20	720	1300	1970	720	4400	4590
Min	14.6	-0.1	6.75	53	426	660	50	500	950
Mean	20.9	6.9	7.58	417	847	1297	18	1881	2405

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration) except May 31 NO3+NO2 and NH3+NH4 data which are totals for this site only.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	20.8	15.0	7.38	537	663	1520	550	1100	2070
AUG	1	19.2	14.3	7.80	552	559	1430	80	500	1510
SEP	1	17.2	12.5	7.95	667	873	1970	50	700	2020
OCT	1	21.0	5.2	7.10	436	833	1790	160	600	1950
NOV	1	19.4	2.1	8.20	362	741	1170	1400	1600	2570
DEC	1	16.0	0.1	7.60	310	894	1510	2400	2500	3910
JAN	1	15.0	-0.1	7.65	548	1300	1570	3020	4400	4590
FEB	1	14.6	2.5	7.90	563	1170	1160	2960	3300	4120
MAR	2	20.7	2.2	7.70	369	948	1100	1805	2350	2355
APR	1	27.6	6.7	7.13	348	812	805	1440	1950	1525
MAY	2	25.7	7.7	7.63	365	833	960	1055	1800	2015
JUN	2	22.1	8.9	7.48	174	756	1240	900	1750	2140
N=	16	12	12	12	12	12	12	12	12	12
Max		27.6	15.0	8.20	667	1300	1970	3020	4400	4590
Min		14.6	-0.1	7.10	174	559	805	50	500	1510
Mean		19.9	6.4	7.63	436	865	1352	1318	1879	2565
Annual Nutrient Load (tons/year)					8.30	16.58	25.87	24.08	35.13	47.40

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	96%

Frequency of Exceedence

Chronic Ammonia Criterion	42%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	17.3 X
Nitrogen Criterion	2.6 X

Magnitude of Exceedence

Chronic Ammonia Criterion	0.8 X
Acute Ammonia Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	17.30
NITROGEN	2.46
CUMULATIVE SCORE	19.76

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.33
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	32.2 (I)	14.8	7.40	310	440	1800	10	500	1810
Jul 27	57.2 (I)	17.6	7.90	270	345	1230	20	1600	1250
Aug 11	51.5 (I)	14.7	8.20	337	373	1400	20	700	1420
Sep 14	35.5 (I)	12.7	8.25	266	422	970	20	600	990
Oct 13	39.2 (I)	4.0	6.95	240	676	1810	10	700	1820
Nov 16	44.4 (I)	0.9	8.40	210	519	1230	580	1000	1810
Dec 15	38.0 (E)	0.0	7.80	170	596	1500	1900	1500	3400
Jan 18	32.0 (E)	0.0	7.75	278	746	1340	1340	2000	2680
Feb 9	38.4 (I)	0.6	7.95	307	863	1400	1240	1900	2640
Mar 8	40.9 (I)	1.9	7.80	203	760	1330	930	1800	2260
Mar 29	46.8 (I)	1.4	8.20	220	707	1320	930	1400	2250
Apr 12	54.4 (I)	7.0	8.20	158	659	1260	330	1300	1590
Apr 20	78.3 (I)	6.3	7.20		543			1400	
May 2	56.8 (I)	4.7	7.95	152	447	820	610	1000	1430
May 17	81.5 (I)	8.8	7.70	165	424	900	30	600	930
May 31	85.9 (I)	6.0	6.81	46	534	510	330	1300	840
Jun 14	43.2 (I)	12.2	8.00	114	349	1220	10 <	700	1220
N=	17	17	17	16	17	16	16	17	16
Max	85.9	17.6	8.40	337	863	1810	1900	2000	3400
Min	32.0	0.0	6.81	46	345	510	10 <	500	840
Mean	50.4	6.7	7.79	215	553	1253	519	1176	1771

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	44.7	16.2	7.65	290	393	1515	15	1050	1530
AUG	1	51.5	14.7	8.20	337	373	1400	20	700	1420
SEP	1	35.5	12.7	8.25	266	422	970	20	600	990
OCT	1	39.2	4.0	6.95	240	676	1810	10	700	1820
NOV	1	44.4	0.9	8.40	210	519	1230	580	1000	1810
DEC	1	38.0	0.0	7.80	170	596	1500	1900	1500	3400
JAN	1	32.0	0.0	7.75	278	746	1340	1340	2000	2680
FEB	1	38.4	0.6	7.95	307	863	1400	1240	1900	2640
MAR	2	43.9	1.7	8.00	212	734	1325	930	1600	2255
APR	1	66.4	6.7	7.70	158	601	1260	330	1350	1590
MAY	2	69.2	6.8	7.83	159	436	860	320	800	1180
JUN	2	64.6	9.1	7.41	80	442	865	165	1000	1030
N=	16	12	12	12	12	12	12	12	12	12
Max		69.2	16.2	8.40	337	863	1810	1900	2000	3400
Min		32.0	0.0	6.95	80	373	860	10	600	990
Mean		47.3	6.1	7.82	226	567	1290	573	1183	1862
Annual Nutrient Load (tons/year)					9.96	25.48	58.31	23.41	53.10	81.71

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	83%
Magnitude of Exceedence	
Phosphorus Criterion	11.3 X
Nitrogen Criterion	1.9 X
NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	11.33
NITROGEN	1.55
CUMULATIVE SCORE	12.88

Frequency of Exceedence	
Chronic Ammonia Criterion	21%
Acute Ammonia Criterion	0%
Magnitude of Exceedence	
Chronic Ammonia Criterion	0.4 X
Acute Ammonia Criterion	0.1 X
AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.09
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:04 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	29.7	(I)	18.0	8.65	160	220	10 <	50	500	50
Jul 27	27.3	(I)	22.2	8.70	83	130	30	40	600	70
Aug 11	23.3	(I)	19.5	9.10	105	140	30	50	400	80
Sep 14	28.7	(I)	17.2	9.05	66	97	10 <	30	500	30
Oct 13	25.6	(I)	5.8	8.20	30	81	260	20	300	280
Nov 16	40.4	(I)	0.8	8.75	20	109	70	10	400	80
Dec 15	33.0	(I)	1.0	7.90	16	114	420	60	300	480
Jan 12	26.2	(I)	0.4	7.80	29	131	630	250	500	880
Feb 9	31.5	(I)	1.8	8.05	48	229	900	410	1000	1310
Mar 8	36.0	(I)	3.1	8.68	1	193	310	10 <	1100	310
Mar 29	39.7	(I)	1.5	9.00	6	173	120	10 <	1200	120
Apr 12	48.6	(I)	10.7	8.60	4	269	40	10 <	1400	40
Apr 20	97.8	(I)	11.6	8.60	20	193	10 <	10 <	1000	10 <
May 2	57.0	(I)	8.4	8.90	6	168	10 <	10 <	900	10 <
May 17	69.8	(I)	13.5	8.75	48	131	10	20	600	30
May 31	104.1	(I)		8.30	52	116	30	40	600	70
Jun 14	23.7	(I)	17.4	8.65	44	107	40	90	900	130
N=	17		16	17	17	17	17	17	17	17
Max	104.1		22.2	9.10	160	269	900	410	1400	1310
Min	23.3		0.4	7.80	1	81	10 <	10 <	300	10 <
Mean	43.7		9.6	8.57	43	153	170	63	718	233

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	28.5	20.1	8.68	122	175	15	45	550	60
AUG	1	23.3	19.5	9.10	105	140	30	50	400	80
SEP	1	28.7	17.2	9.05	66	97	10	< 30	500	30
OCT	1	25.6	5.8	8.20	30	81	260	20	300	280
NOV	1	40.4	0.8	8.75	20	109	70	10	400	80
DEC	1	33.0	1.0	7.90	16	114	420	60	300	480
JAN	1	26.2	0.4	7.80	29	131	630	250	500	880
FEB	1	31.5	1.8	8.05	48	229	900	410	1000	1310
MAR	2	37.9	2.3	8.84	4	183	215	10 <	1150	215
APR	2	73.2	11.2	8.60	12	231	20	10 <	1200	20
MAY	2	63.4	11.0	8.83	27	150	10 <	10	750	15
JUN	2	63.9	17.4	8.48	48	112	35	65	750	100
N=	17	12	12	12	12	12	12	12	12	12
Max		73.2	20.1	9.10	122	231	900	410	1200	1310
Min		23.3	0.4	7.80	4	81	10 <	10 <	300	15
Mean		39.6	9.0	8.52	44	146	216	79	650	296
Annual Nutrient Load (tons/year)					1.47	5.90	6.53	2.43	28.08	8.99

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	8%

Magnitude of Exceedence

Phosphorus Criterion	2.9 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	2.92
NITROGEN	0.02
CUMULATIVE SCORE	2.94

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.2 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:05 Mill-Willow Bypass at mouth

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	19.7 (I)	17.9	7.70	15	41	10	60	300	70
Jul 27	29.7 (I)	20.8	8.00	34	60	10	80	500	90
Aug 11	16.1 (I)	18.6	8.20	15	37	20	110	300	130
Sep 14	13.5 (I)	18.3	8.10	11	30	30	80	500	110
Oct 13	17.2 (I)	9.5	7.65	4	38	30	80	300	110
Nov 16	20.5 (I)	3.1	8.40	2	30	70	80	300	150
Dec 15	15.1 (I)	1.5	8.10	1	22	190	120	200	310
Jan 12	18.9 (I)	2.1	7.95	1 <	55	260	80	300	340
Feb 9	22.6 (I)	2.4	8.05	9	53	250	80	500	330
Mar 8	22.8 (I)	6.0	8.19	1 <	41	50	60	1100	110
Mar 29	22.5 (I)	3.4	8.50	1	49	80	60	400	140
Apr 12	28.7 (I)	11.4	7.90	3	56	40	40	500	80
Apr 20	46.2 (I)	7.5	7.30	5	59	20	40	600	60
May 2	41.8 (I)	10.9	8.10	7	37	10	40	300	50
May 17	85.7 (I)	9.1	7.70	9	96	10	20	500	30
May 31	78.3 (I)		7.60	7	40	20	30	500	50
Jun 14	43.9 (I)	18.4	8.25	13	31	20	20	400	40
N=	17	16	17	17	17	17	17	17	17
Max	85.7	20.8	8.50	34	96	260	120	1100	340
Min	13.5	1.5	7.30	1 <	22	10	20	200	30
Mean	32.0	10.1	7.98	8	46	66	64	441	129

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 05 Mill-Willow Bypass at mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	24.7	19.4	7.85	25	51	10	70	400	80
AUG	1	16.1	18.6	8.20	15	37	20	110	300	130
SEP	1	13.5	18.3	8.10	11	30	30	80	500	110
OCT	1	17.2	9.5	7.65	4	38	30	80	300	110
NOV	1	20.5	3.1	8.40	2	30	70	80	300	150
DEC	1	15.1	1.5	8.10	1	22	190	120	200	310
JAN	1	18.9	2.1	7.95	1 <	55	260	80	300	340
FEB	1	22.6	2.4	8.05	9	53	250	80	500	330
MAR	2	22.7	4.7	8.35	1 <	45	65	60	750	125
APR	2	37.5	9.5	7.60	4	58	30	40	550	70
MAY	2	63.8	10.0	7.90	8	67	10	30	400	40
JUN	2	61.1	18.4	7.93	10	36	20	25	450	45
N=	17	12	12	12	12	12	12	12	12	12
Max		63.8	19.4	8.40	25	67	260	120	750	340
Min		13.5	1.5	7.60	1 <	22	10	25	200	40
Mean		27.8	9.8	8.01	7	43	82	71	413	153
Annual Nutrient Load (tons/year)					0.21	1.28	1.68	1.56	11.72	3.24

Frequency of Exceedence	
Phosphorus Criterion	33%
Nitrogen Criterion	0%

Magnitude of Exceedence	
Phosphorus Criterion	0.9 X
Nitrogen Criterion	0.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.29
NITROGEN	0.00
CUMULATIVE SCORE	0.29

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:06 Warm Springs Creek at mouth

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/L as P)	Total P Conc. (ug/L as P)	NO3+NO2 Conc. (ug/L as N)	Total NH3+ NH4 Conc. (ug/L as N)	Total KJL-N Conc. (ug/L as N)	TSIN Conc. (ug/L as N)
Jul 7	0.2	(I)	19.1	7.45	5	9	10 <	10 <	100	10 <
Jul 27	0.1	(I)	21.2	7.75	8	18	10	30	300	40
Aug 11	0.3	(I)	19.7	8.05	1 <	1	10 <	10	300	10
Sep 14	0.1	(I)	18.9	7.95	4	17	10 <	10 <	400	10 <
Oct 13	0.2	(I)	6.8	7.25	9	26	10 <	10 <	100	10 <
Nov 16	3.7	(I)	2.1	8.60	2	8	50	10 <	100	50
Dec 15	7.4	(I)	0.5	8.10	1 <	6	160	10 <	100	160
Jan 12	8.0	(E)	0.4	7.90	5	13	80	10 <	100	80
Feb 9	26.9	(I)	0.1	8.00	4	28	110	10 <	400	110
Mar 8	4.6	(I)	4.2	8.01	1 <	3	30	10 <	500	30
Mar 29	21.7	(I)	3.6	8.40	1 <	4	100	10 <	200	100
Apr 12	29.3	(I)	11.6	8.25	1	13	70	10	200	80
Apr 20	44.9	(I)	7.5	7.70	2	16	60	10 <	400	60
May 2	36.0	(I)	7.1	8.00	1	9	40	10 <	200	40
May 17	113.0	(M)	7.7	7.65	6	165	50	10 <	800	50
May 31	91.2	(E)	7.4	7.30	5	14	50	10	200	60
Jun 14	59.4	(I)	11.1	7.65	4	10	40	10	200	50
N=	17		17	17	17	17	17	17	17	17
Max	113.0		21.2	8.60	9	165	160	30	800	160
Min	0.1		0.1	7.25	1 <	1	10 <	10 <	100	10 <
Mean	26.3		8.8	7.88	3	21	50	10 <	271	54

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 06 Warm Springs Creek at mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	6.8	20.2	7.60	7	14	10 <	15	200	20
AUG	1	3.0	19.7	8.05	1 <	1	10 <	10	300	10
SEP	1	3.5	18.9	7.95	4	17	10 <	10 <	400	10 <
OCT	1	10.6	6.8	7.25	9	26	10 <	10 <	100	10 <
NOV	1	15.5	2.1	8.60	2	8	50	10 <	100	50
DEC	1	14.7	0.5	8.10	1 <	6	160	10 <	100	160
JAN	1	8.4	0.4	7.90	5	13	80	10 <	100	80
FEB	1	15.3	0.1	8.00	4	28	110	10 <	400	110
MAR	2	21.4	3.9	8.21	1 <	4	65	10 <	350	65
APR	2	34.1	9.6	7.98	2	15	65	10 <	300	70
MAY	2	70.0	7.4	7.83	4	87	45	10 <	500	45
JUN	2	58.5	9.3	7.48	5	12	45	10	200	55
N=	17	12	12	12	12	12	12	12	12	12
Max		70.0	20.2	8.60	9	87	160	15	500	160
Min		3.0	0.1	7.25	1 <	1	10 <	10 <	100	10 <
Mean		21.8	8.2	7.91	3	19	52	10 <	254	55
Annual Nutrient Load (tons/year)					0.07	0.71	1.21	0.06	6.49	1.29

Frequency of Exceedence	
Phosphorus Criterion	4%
Nitrogen Criterion	0%

Magnitude of Exceedence	
Phosphorus Criterion	0.4 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.02
NITROGEN	0.00
CUMULATIVE SCORE	0.02

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:07 Clark Fork below Warm Springs Creek

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	53.7	(I)	19.8	8.10	86	130	30	30	400	60
Jul 27	61.8	(I)	22.6	8.15	58	91	30	50	400	80
Aug 11	39.7	(I)	20.2	8.70	61	85	50	40	400	90
Sep 14	42.3	(I)	19.3	8.80	47	69	10	< 30	500	30
Oct 13	45.8	(I)	9.0	7.85	14	57	10	< 30	200	30
Nov 16	64.6	(E)	2.0	8.65	10	64	80	30	300	110
Dec 15	55.5	(I)	1.5	7.96	8	67	280	70	200	350
Jan 12	53.0	(E)	0.8	7.95	19	93	480	180	400	660
Feb 9	81.0	(I)	1.6	8.10	21	97	320	160	600	480
Mar 8	75.4	(I)	4.9	8.32	1	101	140	40	800	180
Mar 29	85.5	(I)	3.1	8.40	1	112	110	30	600	140
Apr 12	105.8	(I)	11.7	8.10	3	125	40	10	< 700	40
Apr 20	186.4	(I)	10.0	8.25	11	126	10	10	500	20
May 2	139.2	(I)	7.8	8.80	6	88	10	10	500	20
May 17	268.0	(E)	9.8	7.80	16	115	30	20	600	50
May 31	273.6	(I)	8.0	7.70	27	64	30	30	500	60
Jun 14	127.4	(I)	12.6	7.90	14	36	40	30	400	70
N=	17		17	17	17	17	17	17	17	17
Max	273.6		22.6	8.80	86	130	480	180	800	660
Min	39.7		0.8	7.70	1	36	10	< 10	< 200	20
Mean	103.5		9.7	8.21	24	89	99	46	471	145

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 07 Clark Fork below Warm Springs Creek

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	57.8	21.2	8.13	72	111	30	40	400	70
AUG	1	39.7	20.2	8.70	61	85	50	40	400	90
SEP	1	42.3	19.3	8.80	47	69	10 <	30	500	30
OCT	1	45.8	9.0	7.85	14	57	10 <	30	200	30
NOV	1	64.6	2.0	8.65	10	64	80	30	300	110
DEC	1	55.5	1.5	7.96	8	67	280	70	200	350
JAN	1	53.0	0.8	7.95	19	93	480	180	400	660
FEB	1	81.0	1.6	8.10	21	97	320	160	600	480
MAR	2	80.5	4.0	8.36	1	107	125	35	700	160
APR	2	146.1	10.9	8.18	7	126	25	10 <	600	30
MAY	2	203.6	8.8	8.30	11	102	20	15	550	35
JUN	2	200.5	10.3	7.80	21	50	35	30	450	65
N=	17	12	12	12	12	12	12	12	12	12
Max		203.6	21.2	8.80	72	126	480	180	700	660
Min		39.7	0.8	7.80	1	50	10 <	10 <	200	30
Mean		89.2	9.1	8.23	24	86	120	55	442	176
Annual Nutrient Load (tons/year)					1.67	7.65	8.15	3.78	42.11	11.99

Frequency of Exceedence

Phosphorus Criterion	96%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.7 X
Nitrogen Criterion	0.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	1.64
NITROGEN	0.00
CUMULATIVE SCORE	1.64

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:08 Clark Fork near Dempsey

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	24.7 (I)	19.0	7.85	23	50	10 <	10 <	200	10 <
Jul 27	63.1 (I)	22.1	8.05	33	64	40	50	400	90
Aug 11	29.0 (I)	19.6	8.65	28	53	10 <	10	400	10
Sep 14	42.9 (I)	17.7	8.50	12	35	10 <	20	400	20
Oct 13	83.5 (I)	8.5	7.75	6	36	40	10	200	50
Nov 16	121.4 (I)	2.3	8.70	3	32	150	10	200	160
Dec 15	133.1 (I)	0.5	8.40	7	48	460	20	200	480
Jan 12		0.1	7.95	16	79	580	80	400	660
Feb 9		0.2	8.05	17	82	500	90	500	590
Mar 8	131.4 (I)	4.8	8.08	2	60	270	10	600	280
Mar 29	148.1 (I)	3.2	8.65	4	91	260	20	500	280
Apr 12	166.8 (I)	12.8	8.35	6	104	90	10 <	700	90
Apr 20		9.0	7.95	11	131	60	10 <	600	60
May 2	186.5 (I)	11.1	8.60	9	80	60	10 <	500	60
May 17		10.9	7.75	17	122	60	20	600	80
May 31			7.40	27	74	50	20	500	70
Jun 14	102.7 (I)	17.9	8.25	8	28	10	10 <	400	10
N=	12	16	17	17	17	17	17	17	17
Max	186.5	22.1	8.70	33	131	580	90	700	660
Min	24.7	0.1	7.40	2	28	10 <	10 <	200	10 <
Mean	102.8	10.0	8.17	13	69	155	21	429	176

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 08 Clark Fork near Dempsey

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	43.9	20.6	7.95	28	57	20	25	300	45
AUG	1	29.0	19.6	8.65	28	53	10 <	10	400	10
SEP	1	42.9	17.7	8.50	12	35	10 <	20	400	20
OCT	1	83.5	8.5	7.75	6	36	40	10	200	50
NOV	1	121.4	2.3	8.70	3	32	150	10	200	160
DEC	1	133.1	0.5	8.40	7	48	460	20	200	480
JAN	1		0.1	7.95	16	79	580	80	400	660
FEB	1		0.2	8.05	17	82	500	90	500	590
MAR	2	139.8	4.0	8.37	3	76	265	15	550	280
APR	2	166.8	10.9	8.15	9	118	75	10 <	650	75
MAY	2	186.5	11.0	8.18	13	101	60	10	550	70
JUN	2	102.7	17.9	7.83	18	51	30	10	450	40
N=	17	10	12	12	12	12	12	12	12	12
Max		186.5	20.6	8.70	28	118	580	90	650	660
Min		29.0	0.1	7.75	3	32	10 <	10 <	200	10
Mean		105.0	9.4	8.21	13	64	182	25	400	207
Annual Nutrient Load (tons/year)					0.86	6.02	12.23	0.99	36.53	13.22

Frequency of Exceedence	
Phosphorus Criterion	58%
Nitrogen Criterion	0%
Magnitude of Exceedence	
Phosphorus Criterion	1.3 X
Nitrogen Criterion	0.2 X
NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.75
NITROGEN	0.00
CUMULATIVE SCORE	0.75

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%
Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X
AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:09 Clark Fork at Deer Lodge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	78.0	(M)	17.4	7.65	12	29	70	10 <	300	70
Jul 27	147.0	(M)	21.8	7.90	28	66	120	40	500	160
Aug 11	62.0	(M)	18.6	8.20	1 <	21	80	20	300	100
Sep 14	73.0	(M)	17.5	8.25	7	23	70	20	400	90
Oct 13	150.0	(M)	8.1	7.80	1	38	100	10	200	110
Nov 16	179.0	(M)	2.0	8.80	1	31	370	10 <	300	370
Dec 15	150.0	(E)	0.5	8.30	7	33	570	10 <	200	570
Jan 12	150.0	(E)	0.2	8.00	14	74	610	50	400	660
Feb 9	190.0	(E)	0.8	8.05	15	104	510	60	600	570
Mar 8	193.0	(M)	5.4	8.01	4	63	320	10 <	700	320
Mar 29	202.0	(M)	3.7	8.70	3	77	320	10 <	500	320
Apr 12	214.0	(M)	12.5	8.40	4	95	160	10 <	600	160
Apr 20	351.0	(M)	9.5	7.65	14	144	130	10 <	700	130
May 2	287.0	(M)	10.9	8.55	7	69	130	10 <	500	130
May 17	299.0	(M)	10.9	8.35	15	84	110	10 <	400	110
May 31	354.0	(M)		7.60	23	81	130	20	700	150
Jun 14	189.0	(M)	19.0	8.65	3	19	50	10 <	400	50
N=	17		16	17	17	17	17	17	17	17
Max	354.0		21.8	8.80	28	144	610	60	700	660
Min	62.0		0.2	7.60	1 <	19	50	10 <	200	50
Mean	192.2		9.9	8.17	9	62	226	13	453	239

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 09 Clark Fork at Deer Lodge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	148.0	19.6	7.78	20	48	95	20	400	115
AUG	1	88.5	18.6	8.20	1 <	21	80	20	300	100
SEP	1	96.3	17.5	8.25	7	23	70	20	400	90
OCT	1	156.0	8.1	7.80	1	38	100	10	200	110
NOV	1	176.0	2.0	8.80	1	31	370	10 <	300	370
DEC	1	174.0	0.5	8.30	7	33	570	10 <	200	570
JAN	1	150.0	0.2	8.00	14	74	610	50	400	660
FEB	1	184.0	0.8	8.05	15	104	510	60	600	570
MAR	2	204.0	4.6	8.36	4	70	320	10 <	600	320
APR	2	262.0	11.0	8.03	9	120	145	10 <	650	145
MAY	2	273.0	10.9	8.45	11	77	120	10 <	450	120
JUN	2	161.0	19.0	8.13	13	50	90	10	550	100
N=	17	12	12	12	12	12	12	12	12	12
Max		273.0	19.6	8.80	20	120	610	60	650	660
Min		88.5	0.2	7.78	1 <	21	70	10 <	200	90
Mean		172.7	9.4	8.18	8	57	257	16	421	273
Annual Nutrient Load (tons/year)					1.48	10.83	44.32	2.27	74.82	46.60

Frequency of Exceedence

Phosphorus Criterion	50%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.1 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.57
NITROGEN	0.00
CUMULATIVE SCORE	0.57

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Monitoring Station:10 Clark Fork above Little Blackfoot River

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	82.9	(I)	20.2	7.90	64	82	10	10 <	300	10
Jul 27	148.4	(I)	22.7	8.00	52	83	100	30	400	130
Aug 11	80.0	(E)	19.2	8.25	42	59	10 <	20	300	20
Sep 14	90.0	(E)	17.8	8.40	48	66	10 <	20	500	20
Oct 13	166.2	(I)	8.9	8.05	12	49	10	10	300	20
Nov 16	187.7	(I)	1.5	8.40	13	50	290	10 <	300	290
Dec 15	156.0	(I)	0.5	8.35	29	61	530	30	200	560
Jan 12	150.0	(E)	-0.1	8.00	40	83	630	100	400	730
Feb 9	200.0	(E)	-0.1	8.00	35	127	550	100	1000	650
Mar 8	211.0	(I)	5.8	8.12	12	82	340	20	600	360
Mar 29	215.9	(I)	4.1	8.85	18	105	320	20	600	340
Apr 12	230.6	(I)	14.1	8.55	14	113	160	10 <	600	160
Apr 20	326.2	(I)	9.0	7.60	23	171	170	20	700	190
May 2	251.8	(I)	9.6	8.60	20	89	140	10	500	150
May 17	294.6	(I)	12.1	8.50	35	106	90	10 <	400	90
May 31	350.0	(E)		7.40	62	196	90	20	800	110
Jun 14	164.1	(I)	21.0	8.55	39	64	10 <	10 <	400	10 <
N=	17		16	17	17	17	17	17	17	17
Max	350.0		22.7	8.85	64	196	630	100	1000	730
Min	80.0		-0.1	7.40	12	49	10 <	10 <	200	10 <
Mean	194.4		10.4	8.21	33	93	202	24	488	225

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 10 Clark Fork above Little Blackfoot River

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	115.7	21.5	7.95	58	83	55	15	350	70
AUG	1	80.0	19.2	8.25	42	59	10 <	20	300	20
SEP	1	90.0	17.8	8.40	48	66	10 <	20	500	20
OCT	1	166.2	8.9	8.05	12	49	10	10	300	20
NOV	1	187.7	1.5	8.40	13	50	290	10 <	300	290
DEC	1	156.0	0.5	8.35	29	61	530	30	200	560
JAN	1	150.0	-0.1	8.00	40	83	630	100	400	730
FEB	1	200.0	-0.1	8.00	35	127	550	100	1000	650
MAR	2	213.5	5.0	8.49	15	94	330	20	600	350
APR	2	278.4	11.6	8.08	19	142	165	10	650	175
MAY	2	273.2	10.9	8.55	28	98	115	10 <	450	120
JUN	2	257.1	21.0	7.98	51	130	45	10	600	55
N=	17	12	12	12	12	12	12	12	12	12
Max		278.4	21.5	8.55	58	142	630	100	1000	730
Min		80.0	-0.1	7.95	12	49	10 <	10 <	200	20
Mean		180.6	9.8	8.21	32	87	227	28	471	255
Annual Nutrient Load (tons/year)					5.32	16.65	41.33	4.51	88.53	45.95

Frequency of Exceedence

Phosphorus Criterion	83%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.7 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	1.45
NITROGEN	0.00
CUMULATIVE SCORE	1.45

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:11 Clark Fork at Gold Creek Bridge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	172.0	(M)	13.7	8.08	38	52	10 <	10 <	200	10 <
Jul 27	283.0	(M)	17.8	8.03	46	94	40	20	400	60
Aug 10	138.0	(M)	17.0	8.09	37	56	10 <	20	200	20
Sep 15	155.0	(M)	12.8	8.05	47	50	40	40	400	80
Oct 14	263.0	(M)	4.4	7.97	12	47	10 <	10	200	10
Nov 17	270.0	(E)	0.3	7.90	3	42	300	10 <	500	300
Dec 16	240.0	(E)	0.0	7.99	15	44	400	20	200	420
Jan 13	190.0	(E)	0.0	7.75	34	55	490	60	300	550
Feb 10	260.0	(E)	0.0	7.78	33	91	460	70	500	530
Mar 8	282.0	(M)	1.5	7.91	19	74	250	10 <	600	250
Mar 30	307.0	(M)	2.2	7.89	20	70	230	10 <	400	230
Apr 13	358.0	(M)	9.2	7.83	12	104	100	10 <	600	100
Apr 20	550.0	(M)	9.7	7.83	23	169	120	20	700	140
May 2	427.0	(M)	5.7	7.60	18	65	80	10 <	400	80
May 18	767.0	(M)	7.6	7.58	22	92	60	10 <	500	60
Jun 1	971.0	(M)	8.6	7.78	46	117	50	10 <	700	50
Jun 15	341.0	(M)	14.1	7.80	36	59	10	10 <		10
N=	17		17	17	17	17	17	17	16	17
Max	971.0		17.8	8.09	47	169	490	70	700	550
Min	138.0		0.0	7.58	3	42	10 <	10 <	200	10 <
Mean	351.4		7.3	7.87	27	75	155	15	425	170

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 11 Clark Fork at Gold Creek Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	287.0	15.8	8.06	42	73	20	10	300	30
AUG	1	176.0	17.0	8.09	37	56	10	< 20	200	20
SEP	1	175.0	12.8	8.05	47	50	40	40	400	80
OCT	1	247.0	4.4	7.97	12	47	10	< 10	200	10
NOV	1	273.0	0.3	7.90	3	42	300	10	< 500	300
DEC	1	250.0	0.0	7.99	15	44	400	20	200	420
JAN	1	199.0	0.0	7.75	34	55	490	60	300	550
FEB	1	262.0	0.0	7.78	33	91	460	70	500	530
MAR	2	306.0	1.9	7.90	20	72	240	10	< 500	240
APR	2	410.0	9.5	7.83	18	137	110	10	650	120
MAY	2	577.0	6.7	7.59	20	79	70	10	< 450	70
JUN	2	376.0	11.4	7.79	41	88	30	10	< 700	30
N=	17	12	12	12	12	12	12	12	12	12
Max		577.0	17.0	8.09	47	137	490	70	700	550
Min		175.0	0.0	7.59	3	42	10	< 10	< 200	10
Mean		294.8	6.6	7.89	27	69	180	20	408	200
Annual Nutrient Load (tons/year)					7.35	21.64	47.33	4.44	127.31	51.77

Frequency of Exceedence
- Phosphorus Criterion 67%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 1.4 X
- Nitrogen Criterion 0.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.93
- NITROGEN 0.00

CUMULATIVE SCORE 0.93

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:12 Clark Fork at Bonita

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	286.0	(M)	15.6	8.22	25	36	10 <	10 <	200	10 <
Jul 27	525.0	(E)	19.5	8.15	54	79	10 <	30	400	30
Aug 10	208.0	(M)	20.2	8.32	14	28	10 <	10	200	10
Sep 15	221.0	(M)	14.5	8.12	6	19	10 <	10	400	10
Oct 14	451.0	(M)	5.9	8.07	10	63	10 <	10	300	10
Nov 17	476.0	(M)	2.0	8.02	4	29	40	10 <	300	40
Dec 16	390.0	(E)	0.0	8.10	5	27	160	10 <	100	160
Jan 13	410.0	(E)	0.0	7.97	24	50	320	10 <	200	320
Feb 10	449.0	(M)	1.0	8.01	20	62	320	10 <	500	320
Mar 8	480.0	(M)	3.0	7.99	15	58	120	10 <	600	120
Mar 30	497.0	(M)	4.3	7.97	9	50	50	10 <	300	50
Apr 13	512.0	(M)	11.3	7.95	8	85	20	10 <	400	20
Apr 20	703.0	(M)	11.0	7.83	21	220	100	10	900	110
May 2	508.0	(M)	8.3	8.05	15	55	10 <	10 <	300	10 <
May 18	843.0	(M)	10.4	7.77	27	94	40	10 <	500	40
Jun 1	1330.0	(M)	9.6	7.82	42	165	20	10 <	900	20
Jun 15	506.0	(M)	16.7	8.08	33	53	10	10 <		10
N=	17		17	17	17	17	17	17	16	17
Max	1330.0		20.2	8.32	54	220	320	30	900	320
Min	208.0		0.0	7.77	4	19	10 <	10 <	100	10 <
Mean	517.4		9.0	8.03	20	69	71	10 <	406	75

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 12 Clark Fork at Bonita

Monthly Average Values

Month	N=	Streamflow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	458.0	17.6	8.19	40	58	10 <	15	300	15
AUG	1	281.0	20.2	8.32	14	28	10 <	10	200	10
SEP	1	271.0	14.5	8.12	6	19	10 <	10	400	10
OCT	1	428.0	5.9	8.07	10	63	10 <	10	300	10
NOV	1	463.0	2.0	8.02	4	29	40	10 <	300	40
DEC	1	436.0	0.0	8.10	5	27	160	10 <	100	160
JAN	1	365.0	0.0	7.97	24	50	320	10 <	200	320
FEB	1	440.0	1.0	8.01	20	62	320	10 <	500	320
MAR	2	490.0	3.7	7.98	12	54	85	10 <	450	85
APR	2	560.0	11.2	7.89	15	153	60	10 <	650	65
MAY	2	698.0	9.4	7.91	21	75	20	10 <	400	20
JUN	2	572.0	13.2	7.95	38	109	15	10 <	900	15
N=	17	12	12	12	12	12	12	12	12	12
Max		698.0	20.2	8.32	40	153	320	15	900	320
Min		271.0	0.0	7.89	4	19	10 <	10 <	100	10
Mean		455.2	8.2	8.04	17	60	85	10 <	392	89
Annual Nutrient Load (tons/year)					8.16	29.68	35.76	1.39	186.04	37.38

Frequency of Exceedence
Phosphorus Criterion 50%
Nitrogen Criterion 0%

Magnitude of Exceedence
Phosphorus Criterion 1.2 X
Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 0.60
NITROGEN 0.00

CUMULATIVE SCORE 0.60

Frequency of Exceedence
Chronic Ammonia Criterion 0%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 0.0 X
Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 0.00
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:13 Clark Fork at Turah

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	678.0	(M)	13.9	8.17	8	16	10 <	10 <	100	10 <
Jul 27	868.0	(M)	18.1	8.10	27	46	10 <	30	400	30
Aug 10	411.0	(M)	19.0	8.26	1	19	10 <	10	200	10
Sep 15	398.0	(M)	13.7	8.12	2	14	10 <	10	300	10
Oct 14	625.0	(M)	5.9	8.06	7	38	10 <	10 <	200	10 <
Nov 17	652.0	(M)	2.3	8.01	2	17	50	10 <	200	50
Dec 16	527.0	(M)	0.3	8.06	3	17	80	10 <	100 <	80
Jan 13	620.0	(E)	0.2	7.95	16	34	240	10 <	200	240
Feb 10	611.0	(M)	2.2	8.05	12	40	200	10 <	400	200
Mar 8	704.0	(M)		7.97	9	44	80	10 <	600	80
Mar 30	739.0	(M)	4.5	7.99	5	41	50	10 <	300	50
Apr 13	901.0	(M)	10.0	7.87	7	69	30	10 <	400	30
Apr 20	1620.0	(M)	9.0	7.68	13	114	50	10 <	600	50
May 2	1190.0	(M)	7.3	7.92	11	34	10 <	10 <	300	10 <
May 18	2530.0	(M)	8.1	7.66	13	80	40	10 <	500	40
Jun 1	2620.0	(M)	8.7	7.77	24	92	10	10 <	500	10
Jun 15	1370.0	(M)	14.3	7.89	16	35	10	10 <		10
N=	17		16	17	17	17	17	17	16	17
Max	2620.0		19.0	8.26	27	114	240	30	600	240
Min	398.0		0.2	7.66	1	14	10 <	10 <	100 <	10 <
Mean	1003.8		8.6	7.97	10	44	49	10 <	325	52

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 13 Clark Fork at Turah

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	837.0	16.0	8.14	18	31	10 <	15	250	15
AUG	1	490.0	19.0	8.26	1	19	10 <	10	200	10
SEP	1	462.0	13.7	8.12	2	14	10 <	10	300	10
OCT	1	611.0	5.9	8.06	7	38	10 <	10 <	200	10 <
NOV	1	643.0	2.3	8.01	2	17	50	10 <	200	50
DEC	1	599.0	0.3	8.06	3	17	80	10 <	100 <	80
JAN	1	560.0	0.2	7.95	16	34	240	10 <	200	240
FEB	1	619.0	2.2	8.05	12	40	200	10 <	400	200
MAR	2	716.0	4.5	7.98	7	43	65	10 <	450	65
APR	2	1090.0	9.5	7.78	10	92	40	10 <	500	40
MAY	2	1890.0	7.7	7.79	12	57	20	10 <	400	20
JUN	2	1462.0	11.5	7.83	20	64	10	10 <	500	10
N=	17	12	12	12	12	12	12	12	12	12
Max		1890.0	19.0	8.26	20	92	240	15	500	240
Min		462.0	0.2	7.78	1	14	10 <	10 <	100 <	10 <
Mean		831.6	7.7	8.00	9	39	59	10 <	300	62
Annual Nutrient Load (tons/year)					8.82	37.71	38.93	1.83	278.77	40.76

Frequency of Exceedence

Phosphorus Criterion	17%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.8 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.13
NITROGEN	0.00
CUMULATIVE SCORE	0.13

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:14 Blackfoot River at USGS station near mouth

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)		Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)		Total NH3+ NH4 Conc. (ug/l as N)		Total KJL-N Conc. (ug/l as N)		TSIN Conc. (ug/l as N)	
Jul 7	634.0	(M)	14.9	8.25	1	<	5	10	<	10	<	100	<	10	<
Jul 27	633.0	(M)	19.0	8.17	3		11	20		30		100		50	
Aug 10	450.0	(M)	20.5	8.34	1	<	9	10	<	10	<	200		10	<
Sep 15	370.0	(M)	13.7	8.18	3		9	10		20		300		30	
Oct 14	376.0	(M)	4.2	8.07	1	<	14	10	<	10	<	100	<	10	<
Nov 17	384.0	(M)	1.1	8.05	1	<	3	80		10	<	100		80	
Dec 16	330.0	(E)	0.0	8.05	1	<	3	10		10	<	100	<	10	
Jan 13	380.0	(E)	0.0	7.86	1		5	60		10	<	100		60	
Feb 10	410.0	(E)	0.0	7.95	1		13	60		10	<	200		60	
Mar 8	400.0	(M)		8.01	1	<	11	20		10	<	500		20	
Mar 30	516.0	(M)	3.5	7.99	1	<	11	30		10	<	200		30	
Apr 13	770.0	(M)	8.5	7.75	1	<	28	20		10	<	200		20	
Apr 20	2440.0	(M)	7.5	7.65	1		28	10	<	10	<	300		10	<
May 2	1450.0	(M)	7.3	7.87	5		11	10	<	10	<	100		10	<
May 18	3510.0	(M)	8.7	7.64	1	<	24	20		10	<	200		20	
Jun 1	3300.0	(M)	8.7	7.83	4		30	10		10	<	400		10	
Jun 15	1650.0	(M)	15.2	7.98	3		15	10		10	<			10	
N=	17		16	17	17		17	17		17		16		17	
Max	3510.0		20.5	8.34	5		30	80		30		500		80	
Min	330.0		0.0	7.64	1	<	3	10	<	10	<	100	<	10	<
Mean	1059.0		8.3	7.98	1		14	21		10	<	181		24	

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 14 Blackfoot River at USGS station near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	634.0	17.0	8.21	2	8	10	15	100 <	25
AUG	1	471.0	20.5	8.34	1 <	9	10 <	10 <	200	10 <
SEP	1	387.0	13.7	8.18	3	9	10	20	300	30
OCT	1	370.0	4.2	8.07	1 <	14	10 <	10 <	100 <	10 <
NOV	1	369.0	1.1	8.05	1 <	3	80	10 <	100	80
DEC	1	332.0	0.0	8.05	1 <	3	10	10 <	100 <	10
JAN	1	348.0	0.0	7.86	1	5	60	10 <	100	60
FEB	1	367.0	0.0	7.95	1	13	60	10 <	200	60
MAR	2	435.0	3.5	8.00	1 <	11	25	10 <	350	25
APR	2	1231.0	8.0	7.70	1 <	28	10	10 <	250	10
MAY	2	2680.0	8.0	7.76	3	18	10	10 <	150	10
JUN	2	1808.0	12.0	7.91	4	23	10	10 <	400	10
N=	17	12	12	12	12	12	12	12	12	12
Max		2680.0	20.5	8.34	4	28	80	20	400	80
Min		332.0	0.0	7.70	1 <	3	10 <	10 <	100 <	10 <
Mean		786.0	7.3	8.01	1	12	24	10 <	171	27
Annual Nutrient Load (tons/year)					1.30	12.56	12.52	1.42	158.34	13.94

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.2 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:15 Clark Fork below Milltown Dam

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1280.0	(M)	16.5	8.34	11	19	10 <	20	100	20
Jul 27	1480.0	(M)	20.6	8.11	21	36	10 <	20	100	20
Aug 10	892.0	(M)	20.0	8.15	12	25	10 <	40	200	40
Sep 15	916.0	(M)	15.8	8.24	12	21	10 <	20	400	20
Oct 14	1040.0	(M)	7.2	8.12	2	23	10 <	10	100 <	10
Nov 17	1060.0	(M)	2.6	8.07	1	10	60	10 <	200	60
Dec 16	921.0	(M)	0.0	8.10	1 <	12	40	10 <	100 <	40
Jan 13	930.0	(E)	0.0	7.91	9	18	120	10 <	100	120
Feb 10	998.0	(M)	1.8	8.12	7	22	110	10 <	300	110
Mar 8	1140.0	(M)		8.07	5	22	40	10 <	500	40
Mar 30	1250.0	(M)	4.3	8.02	3	22	40	10 <	200	40
Apr 13	1590.0	(M)	11.8	7.99	5	35	20	10 <	300	20
Apr 20	3940.0	(M)	8.5	7.60	5	36	10 <	10 <	400	10 <
May 2	2590.0	(M)	7.9	7.80	8	20	10 <	10 <	200	10 <
May 18	6000.0	(M)	9.0	7.59	7	41	30	10 <	300	30
Jun 1	5870.0	(M)	8.5	7.75	11	41	10	10 <	400	10
Jun 15	2950.0	(M)	15.5	7.86	6	25	10	10 <		10
N=	17		16	17	17	17	17	17	16	17
Max	6000.0		20.6	8.34	21	41	120	40	500	120
Min	892.0		0.0	7.59	1 <	10	10 <	10 <	100 <	10 <
Mean	2049.8		9.4	7.99	7	25	28	10 <	231	35

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 15 Clark Fork below Milltown Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	1434.0	18.6	8.23	16	28	10 <	20	100	20
AUG	1	963.0	20.0	8.15	12	25	10 <	40	200	40
SEP	1	858.0	15.8	8.24	12	21	10 <	20	400	20
OCT	1	991.0	7.2	8.12	2	23	10 <	10	100 <	10
NOV	1	1030.0	2.6	8.07	1	10	60	10 <	200	60
DEC	1	982.0	0.0	8.10	1 <	12	40	10 <	100 <	40
JAN	1	895.0	0.0	7.91	9	18	120	10 <	100	120
FEB	1	981.0	1.8	8.12	7	22	110	10 <	300	110
MAR	2	1149.0	4.3	8.05	4	22	40	10 <	350	40
APR	2	2268.0	10.2	7.80	5	36	10	10 <	350	10
MAY	2	4480.0	8.5	7.70	8	31	15	10 <	250	15
JUN	2	3229.0	12.0	7.81	9	33	10	10 <	400	10
N=	17	12	12	12	12	12	12	12	12	12
Max		4480.0	20.0	8.24	16	36	120	40	400	120
Min		858.0	0.0	7.70	1 <	10	10 <	10 <	100 <	10
Mean		1605.0	8.4	8.02	7	23	34	10 <	221	41
Annual Nutrient Load (tons/year)					11.48	42.11	39.29	7.83	397.93	47.12

Frequency of Exceedence
- Phosphorus Criterion 0%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.5 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.00
- NITROGEN 0.00

CUMULATIVE SCORE 0.00

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:16 Clark Fork above Missoula WWTP

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1280.0	(E)	17.0	8.39	8	17	10 <	10 <	100 <	10 <
Jul 27	1480.0	(E)	21.9	8.27	16	32	10 <	30	200	30
Aug 11	892.0	(E)	17.6	8.06	2	16	10 <	10 <	200	10 <
Sep 15	916.0	(E)	15.8	8.30	7	18	10 <	20	300	20
Oct 14	1040.0	(E)	6.8	8.17	1 <	22	10 <	10 <	100 <	10 <
Nov 17	1060.0	(E)	2.1	8.05	1	10	10 <	10 <	200	10 <
Dec 16	921.0	(E)	0.0	8.12	1	12	30	10 <	100 <	30
Jan 13	930.0	(E)	0.0	7.91	8	17	160	10 <	100 <	160
Feb 10	998.0	(E)	0.5	8.12	7	39	100	10 <	500	100
Mar 8	1140.0	(E)		8.20	2	80	20	10 <	400	20
Mar 30	1250.0	(E)	4.8	7.85	2	25	30	10 <	200	30
Apr 13	1590.0	(E)	11.9	8.10	4	35	20	10 <	300	20
Apr 20	3940.0	(E)	8.5	7.53	4	34	10 <	10 <	300	10 <
May 2	2590.0	(E)	8.7	7.95	7	24	10 <	10 <	200	10 <
May 18	6000.0	(E)	9.1	7.51	4	47	20	10 <	300	20
Jun 1	5870.0	(E)	8.8	7.75	11	40	10	10 <	400	10
Jun 15	2950.0	(E)	16.9	8.02	7	24	10	10 <		10
N=	17		16	17	17	17	17	17	16	17
Max	6000.0		21.9	8.39	16	80	160	30	500	160
Min	892.0		0.0	7.51	1 <	10	10 <	10 <	100 <	10 <
Mean	2049.8		9.4	8.02	5	29	24	10 <	219	26

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 16 Clark Fork above Missoula WWTP

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	1434.0	19.5	8.33	12	25	10 <	15	100	15
AUG	1	963.0	17.6	8.06	2	16	10 <	10 <	200	10 <
SEP	1	858.0	15.8	8.30	7	18	10 <	20	300	20
OCT	1	991.0	6.8	8.17	1 <	22	10 <	10 <	100 <	10 <
NOV	1	1030.0	2.1	8.05	1	10	10 <	10 <	200	10 <
DEC	1	982.0	0.0	8.12	1	12	30	10 <	100 <	30
JAN	1	895.0	0.0	7.91	8	17	160	10 <	100 <	160
FEB	1	981.0	0.5	8.12	7	39	100	10 <	500	100
MAR	2	1149.0	4.8	8.03	2	53	25	10 <	300	25
APR	2	2268.0	10.2	7.82	4	35	10	10 <	300	10
MAY	2	4480.0	8.9	7.73	6	36	10	10 <	250	10
JUN	2	3229.0	12.9	7.89	9	32	10	10 <	400	10
N=	17	12	12	12	12	12	12	12	12	12
Max		4480.0	19.5	8.33	12	53	160	20	500	160
Min		858.0	0.0	7.73	1 <	10	10 <	10 <	100 <	10 <
Mean		1605.0	8.3	8.04	5	26	29	10 <	213	32
Annual Nutrient Load (tons/year)					8.70	46.27	32.41	3.18	384.35	35.60

Frequency of Exceedence

Phosphorus Criterion	4%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.5 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.02
NITROGEN	0.00
CUMULATIVE SCORE	0.02

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:17 Missoula WWTP discharge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	13.6	(I)	17.8	7.18	4300	4690	5800	4460	5600	10260
Jul 27	14.2	(I)	18.9	7.43	4340	4370	1580	8110	8700	9690
Aug 11	10.2	(I)	19.1	7.51	4710	4930	1050	7260	9000	8310
Sep 15	13.1	(I)	18.8	7.22	2520	5590	1460	16200	20500	17660
Oct 14	12.7	(I)	16.8	7.42	3400	3840	3480	10300	6200	13780
Nov 17	11.1	(I)	15.0	7.28	5150	5100	14500	2700	3300	17200
Dec 16	11.4	(I)	12.5	7.47	4700	6240	17300	3220	5200	20520
Jan 13	9.4	(M)	11.3	7.25	4730	5140	4900	13800	15200	18700
Feb 10	12.4	(I)	11.2	7.08	4870	5550	10800	4730	6200	15530
Mar 8	13.7	(I)		7.20	5340	6040	11000	7980	8500	18980
Mar 30	13.5	(I)	13.3	7.30	5600	18300	8130	9260	10800	17390
Apr 13	13.8	(I)	15.0	7.12	6130	6100	4520	17400	18600	21920
Apr 20	13.9	(I)	14.7	7.09	6070	9970	3080	11700	14600	14780
May 2	12.5	(I)	14.5	6.69	4960	5010	14500	330	3000	14830
May 18	14.2	(I)	15.5	7.17	4990	6390	620	14600	16100	15220
Jun 1	14.5	(I)	15.4	6.95	5400	5420	13600	6380	7900	19980
Jun 15	14.9	(I)	18.0	7.17	3240	4460	3780	4860		8640
N=	17		16	17	17	17	17	17	16	17
Max	14.9		19.1	7.51	6130	18300	17300	17400	20500	21920
Min	9.4		11.2	6.69	2520	3840	620	330	3000	8310
Mean	12.9		15.5	7.21	4732	6302	7065	8429	9963	15494

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 17 Missoula WWTP discharge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	11.3	18.4	7.31	4320	4530	3690	6285	7150	9975
AUG	1	11.0	19.1	7.51	4710	4930	1050	7260	9000	8310
SEP	1	9.6	18.8	7.22	2520	5590	1460	16200	20500	17660
OCT	1	8.7	16.8	7.42	3400	3840	3480	10300	6200	13780
NOV	1	9.3	15.0	7.28	5150	5100	14500	2700	3300	17200
DEC	1	8.7	12.5	7.47	4700	6240	17300	3220	5200	20520
JAN	1	9.3	11.3	7.25	4730	5140	4900	13800	15200	18700
FEB	1	10.0	11.2	7.08	4870	5550	10800	4730	6200	15530
MAR	2	10.6	13.3	7.25	5470	12170	9565	8620	9650	18185
APR	2	11.3	14.9	7.11	6100	8035	3800	14550	16600	18350
MAY	2	10.8	15.0	6.93	4975	5700	7560	7465	9550	15025
JUN	2	12.2	16.7	7.06	4320	4940	8690	5620	7900	14310
N=	17	12	12	12	12	12	12	12	12	12
Max		12.2	19.1	7.51	6100	12170	17300	16200	20500	20520
Min		8.7	11.2	6.93	2520	3840	1050	2700	3300	8310
Mean		10.2	15.2	7.24	4605	5980	7233	8396	9704	15629
Annual Nutrient Load (tons/year)					46.60	60.59	70.82	84.47	98.26	155.29

Frequency of Exceedence
Phosphorus Criterion 100%
Nitrogen Criterion 100%

Magnitude of Exceedence
Phosphorus Criterion 119.6 X
Nitrogen Criterion 15.6 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 119.61
NITROGEN 15.63

CUMULATIVE SCORE 135.24

Frequency of Exceedence
Chronic Ammonia Criterion 96%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 5.3 X
Acute Ammonia Criterion 0.5 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 5.04
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:18 Clark Fork at Shuffield's

Instantaneous Values

Date	Streamflow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1280.0 (E)	17.5	8.32	44	57	50	30	200	80
Jul 27	1480.0 (E)	22.0	8.28	47	60	30	60	200	90
Aug 11	892.0 (E)	18.6	8.13	28	50	10	40	400	50
Sep 15	916.0 (E)	15.9	8.33	60	78	30	160	600	190
Oct 14	1040.0 (E)	7.6	8.24	31	56	20	90	200	110
Nov 17	1060.0 (E)	2.5	8.13	26	54	14	20	200	34
Dec 16	921.0 (E)	0.0	8.09	53	67	230	20	200	250
Jan 13	930.0 (E)	0.0	7.95	56	68	200	90	300	290
Feb 10	998.0 (E)	0.0	8.01	52	80	170	30	500	200
Mar 8	1140.0 (E)		8.13	59	80	100	60	600	160
Mar 30	1250.0 (E)	5.5	8.10	54	72	90	70	300	160
Apr 13	1590.0 (E)	12.1	8.12	41	73	50	90	400	140
Apr 20	3940.0 (E)	8.7	7.64	18	52	20	30	400	50
May 2	2590.0 (E)	9.3	7.91	22	40	50	10 <	200	50
May 18	6000.0 (E)	9.4	7.56	14	63	20	10	400	30
Jun 1	5870.0 (E)	8.8	7.49	23	53	50	10	500	60
Jun 15	2950.0 (E)	17.3	7.91	22	42	20	10 <		20
N=	17	16	17	17	17	17	17	16	17
Max	6000.0	22.0	8.33	60	80	230	160	600	290
Min	892.0	0.0	7.49	14	40	10	10 <	200	20
Mean	2049.8	9.7	8.02	38	61	68	48	350	116

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 18 Clark Fork at Shuffield's

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	1434.0	19.8	8.30	46	59	40	45	200	85
AUG	1	963.0	18.6	8.13	28	50	10	40	400	50
SEP	1	858.0	15.9	8.33	60	78	30	160	600	190
OCT	1	991.0	7.6	8.24	31	56	20	90	200	110
NOV	1	1030.0	2.5	8.13	26	54	14	20	200	34
DEC	1	982.0	0.0	8.09	53	67	230	20	200	250
JAN	1	895.0	0.0	7.95	56	68	200	90	300	290
FEB	1	981.0	0.0	8.01	52	80	170	30	500	200
MAR	2	1149.0	5.5	8.12	57	76	95	65	450	160
APR	2	2268.0	10.4	7.88	30	63	35	60	400	95
MAY	2	4480.0	9.4	7.74	18	52	35	10 <	300	40
JUN	2	3229.0	13.1	7.70	23	48	35	10 <	500	40
N=	17	12	12	12	12	12	12	12	12	12
Max		4480.0	19.8	8.33	60	80	230	160	600	290
Min		858.0	0.0	7.70	18	48	10	10 <	200	34
Mean		1605.0	8.6	8.05	40	62	76	52	354	129
Annual Nutrient Load (tons/year)					52.43	92.51	94.68	56.66	566.19	154.52

Frequency of Exceedence

Phosphorus Criterion	83%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.2 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	1.04
NITROGEN	0.00
CUMULATIVE SCORE	1.04

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:19 Bitterroot River near mouth

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	560.0 (E)	16.6	8.15	4	12	80	10 <	100	80
Jul 27	860.0 (E)	20.7	8.13	6	19	50	20	100	70
Aug 11	368.0 (E)	18.0	7.95	1 <	16	50	10	300	60
Sep 15	374.0 (E)	14.8	8.18	5	19	200	20	400	220
Oct 14	540.0 (E)	8.7	8.18	1 <	19	20	10	100	30
Nov 17	480.0 (E)	4.5	8.15	1	7	250	10 <	200	250
Dec 16	259.0 (E)	1.5	7.99	1 <	8	140	10 <	100	140
Jan 13	520.0 (E)	0.4	7.64	6	16	240	10 <	100	240
Feb 10	652.0 (E)	3.9	7.77	19	60	140	10 <	600	140
Mar 8	710.0 (E)		7.48	2	19	60	10 <	500	60
Mar 30	880.0 (E)	5.8	7.83	1	20	80	10 <	200	80
Apr 13	1410.0 (E)	11.5	7.82	2	41	20	10 <	300	20
Apr 20	5470.0 (E)	8.5	7.47	5	34	50	10 <	300	50
May 2	2790.0 (E)	8.8	7.62	7	15	20	10 <	200	20
May 18	6900.0 (E)	8.7	7.42	3	43	50	10 <	300	50
Jun 1	6530.0 (E)	9.2	7.44	11	26	50	10 <	400	50
Jun 15	4390.0 (E)	16.4	7.49	7	23	30	10 <		30
N=	17	16	17	17	17	17	17	16	17
Max	6900.0	20.7	8.18	19	60	250	20	600	250
Min	259.0	0.4	7.42	1 <	7	20	10 <	100	20
Mean	1981.9	9.9	7.81	5	23	90	10 <	263	94

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 19 Bitterroot River near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	673.0	18.7	8.14	5	16	65	10	100	75
AUG	1	510.0	18.0	7.95	1 <	16	50	10	300	60
SEP	1	420.0	14.8	8.18	5	19	200	20	400	220
OCT	1	564.0	8.7	8.18	1 <	19	20	10	100	30
NOV	1	513.0	4.5	8.15	1	7	250	10 <	200	250
DEC	1	432.0	1.5	7.99	1 <	8	140	10 <	100	140
JAN	1	461.0	0.4	7.64	6	16	240	10 <	100	240
FEB	1	560.0	3.9	7.77	19	60	140	10 <	600	140
MAR	2	689.0	5.8	7.66	2	20	70	10 <	350	70
APR	2	2637.0	10.0	7.65	4	38	35	10 <	300	35
MAY	2	4942.0	8.8	7.52	5	29	35	10 <	250	35
JUN	2	5043.0	12.8	7.47	9	25	40	10 <	400	40
N=	17	12	12	12	12	12	12	12	12	12
Max		5043.0	18.7	8.18	19	60	250	20	600	250
Min		420.0	0.4	7.47	1 <	7	20	10 <	100	30
Mean		1453.7	9.0	7.86	5	23	107	10 <	267	111
Annual Nutrient Load (tons/year)					8.09	37.90	86.35	2.14	428.23	88.49

Frequency of Exceedence
- Phosphorus Criterion 8%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.5 X
- Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.04
- NITROGEN 0.00

CUMULATIVE SCORE 0.04

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:20 Clark Fork at Harper Bridge

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1840.0 (M)	16.3	8.03	14	28	90	10 <	200	90
Jul 27	2340.0 (M)	20.7	8.26	10	29	40	20	100	60
Aug 11	1260.0 (M)	18.2	8.18	6	29	10 <	10 <	300	10 <
Sep 15	1290.0 (M)	16.2	8.23	12	37	90	20	400	110
Oct 14	1580.0 (M)	8.2	8.83	7	29	30	20	200	50
Nov 18	1540.0 (M)	2.0	7.91	9	23	120	10 <	200	120
Dec 16	1180.0 (M)	0.5	8.04	13	26	170	10 <	100	170
Jan 13	1450.0 (M)	1.0		23	35	230	10 <	100	230
Feb 10	1650.0 (M)	2.6	7.92	25	55	160	10	400	170
Mar 8	1850.0 (M)		7.99	13	47	90	10	500	100
Mar 30	2130.0 (M)	5.9	8.05	11	35	80	10	200	90
Apr 13	3000.0 (M)	11.9	8.00	10	59	40	10 <	200	40
Apr 20	9410.0 (M)	9.2	7.45	7	41	40	10 <	300	40
May 2	5380.0 (M)	9.6	8.06	11	22	20	10 <	200	20
May 18	12900.0 (M)	9.8	7.42	6	49	40	10 <	300	40
Jun 1	12400.0 (M)	9.3	7.60	16	38	50	10 <	300	50
Jun 15	7340.0 (M)	18.0	7.76	10	50	30	10 <		30
N=	17	16	16	17	17	17	17	16	17
Max	12900.0	20.7	8.83	25	59	230	20	500	230
Min	1180.0	0.5	7.42	6	22	10 <	10 <	100	10 <
Mean	4031.8	10.0	7.98	12	37	78	10 <	250	83

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 20 Clark Fork at Harper Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	2107.0	18.5	8.15	12	29	65	10	150	75
AUG	1	1473.0	18.2	8.18	6	29	10 <	10 <	300	10 <
SEP	1	1278.0	16.2	8.23	12	37	90	20	400	110
OCT	1	1555.0	8.2	8.83	7	29	30	20	200	50
NOV	1	1543.0	2.0	7.91	9	23	120	10 <	200	120
DEC	1	1414.0	0.5	8.04	13	26	170	10 <	100	170
JAN	1	1356.0	1.0		23	35	230	10 <	100	230
FEB	1	1541.0	2.6	7.92	25	55	160	10	400	170
MAR	2	1838.0	5.9	8.02	12	41	85	10	350	95
APR	2	4905.0	10.6	7.73	9	50	40	10 <	250	40
MAY	2	9422.0	9.7	7.74	9	36	30	10 <	250	30
JUN	2	8272.0	13.7	7.68	13	44	40	10 <	300	40
N=	17	12	12	11	12	12	12	12	12	12
Max		9422.0	18.5	8.83	25	55	230	20	400	230
Min		1278.0	0.5	7.68	6	23	10 <	10 <	100	10 <
Mean		3058.7	8.9	8.04	12	36	88	10 <	250	94
Annual Nutrient Load (tons/year)					33.77	115.97	183.63	9.12	775.56	192.76

Frequency of Exceedence

Phosphorus Criterion	13%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.7 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.09
NITROGEN	0.00
CUMULATIVE SCORE	0.09

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:21 Stone Container Corporation discharge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	0.0	(I)								
Jul 27	0.0	(I)								
Aug 11	0.0	(I)								
Sep 15	0.0	(I)								
Oct 14	0.0	(I)								
Nov 18	0.0	(I)								
Dec 16	0.0	(I)								
Jan 13	0.0	(I)								
Feb 11	0.0	(I)								
Mar 8	0.0	(I)								
Mar 30	1.0	(I)	7.5	7.76	202	946	30	1080	7500	1110
Apr 13	0.8	(I)	10.3	7.70	271	965	20	1400	2500	1420
Apr 20	39.1	(I)	13.1	7.72	285	773	10 <	1000	1800	1000
May 2	14.5	(I)	11.8	7.86	483	989	10 <	1000	5500	1000
May 18	40.8	(I)	15.0	7.86	513	1090	20	1200	2400	1220
Jun 1	46.9	(I)	13.6	7.79	368	861	10	772	6825	782
Jun 15	25.1	(I)	20.9	7.88	173	801	10	280	5730	290
N=	17		7	7	7	7	7	7	7	7
Max	46.9		20.9	7.88	513	1090	30	1400	7500	1420
Min	0.0		7.5	7.70	173	773	10 <	280	1800	290
Mean	9.9		13.2	7.80	328	918	13	962	4608	975

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 21 Stone Container Corporation discharge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	0	0.0								
AUG	0	0.0								
SEP	0	0.0								
OCT	0	0.0								
NOV	0	0.0								
DEC	0	0.0								
JAN	0	0.0								
FEB	0	0.0								
MAR	1	0.3	7.5	7.76	202	946	30	1080	7500	1110
APR	2	13.6	11.7	7.71	278	869	10	1200	2150	1210
MAY	2	32.5	13.4	7.86	498	1040	10	1100	3950	1110
JUN	2	20.6	17.3	7.84	271	831	10	526	6278	536
N=	7	12	4	4	4	4	4	4	4	4
Max		32.5	17.3	7.86	498	1040	30	1200	7500	1210
Min		0.0	7.5	7.71	202	831	10	526	2150	536
Mean		5.6	12.5	7.79	312	921	15	977	4969	992
Annual Nutrient Load (tons/year)					2.11	5.17	0.06	5.20	23.67	5.25

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	50%

Magnitude of Exceedence

Phosphorus Criterion	18.4 X
Nitrogen Criterion	1.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	18.43
NITROGEN	0.50
CUMULATIVE SCORE	18.92

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.6 X
Acute Ammonia Criterion	0.1 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:22 Clark Fork at Huson

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp.. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1840.0	(E)	17.4	8.14	20	35	40	10	< 200	40
Jul 27	2340.0	(E)	22.7	8.26	15	29	20	30	100	< 50
Aug 11	1260.0	(E)	20.4	8.28	8	30	10	< 10	200	10
Sep 15	1290.0	(E)	16.5	8.27	11	36	10	< 10	400	10
Oct 14	1580.0	(E)	8.9	8.44	7	37	10	< 10	200	10
Nov 18	1540.0	(E)	2.1	7.89	12	26	90	10	< 100	90
Dec 17	1180.0	(E)	0.5	7.93	22	37	200	10	< 100	200
Jan 14	1450.0	(E)	0.0	7.73	31	53	240	20	200	260
Feb 11	1650.0	(E)	2.0		34	69	200	20	500	220
Mar 8	1850.0	(E)		8.01	20	43	80	20	500	100
Mar 30	2130.0	(E)	6.1	7.92	17	39	60	10	300	70
Apr 13	3000.0	(E)	13.4	8.16	12	47	40	10	< 300	40
Apr 20	9410.0	(E)	9.3	7.52	8	49	50	10	400	60
May 2	5380.0	(E)	9.8	7.98	11	22	10	10	< 300	10
May 18	12900.0	(E)	10.7	7.41	7	62	40	10	< 400	40
Jun 1	12400.0	(E)	9.7	7.48	17	41	40	10	< 500	40
Jun 15	7340.0	(E)	18.8	7.83	10	31	30	10	<	30
N=	17		16	16	17	17	17	17	16	17
Max	12900.0		22.7	8.44	34	69	240	30	500	260
Min	1180.0		0.0	7.41	7	22	10	< 10	< 100	< 10
Mean	4031.8		10.5	7.95	15	40	67	10	< 288	75

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 22 Clark Fork at Huson

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	2107.0	20.1	8.20	18	32	30	15	100	45
AUG	1	1473.0	20.4	8.28	8	30	10 <	10	200	10
SEP	1	1278.0	16.5	8.27	11	36	10 <	10	400	10
OCT	1	1555.0	8.9	8.44	7	37	10 <	10	200	10
NOV	1	1543.0	2.1	7.89	12	26	90	10 <	100	90
DEC	1	1414.0	0.5	7.93	22	37	200	10 <	100	200
JAN	1	1356.0	0.0	7.73	31	53	240	20	200	260
FEB	1	1541.0	2.0		34	69	200	20	500	220
MAR	2	1838.0	6.1	7.97	19	41	70	15	400	85
APR	2	4905.0	11.4	7.84	10	48	45	10 <	350	50
MAY	2	9422.0	10.3	7.70	9	42	25	10 <	350	25
JUN	2	8272.0	14.3	7.66	14	36	35	10 <	500	35
N=	17	12	12	11	12	12	12	12	12	12
Max		9422.0	20.4	8.44	34	69	240	20	500	260
Min		1278.0	0.0	7.66	7	26	10 <	10 <	100	10
Mean		3058.7	9.4	7.99	16	41	78	10 <	283	87
Annual Nutrient Load (tons/year)					40.59	121.96	162.26	13.10	1024.74	177.34

Frequency of Exceedence

Phosphorus Criterion	21%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.8 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.17
NITROGEN	0.00
CUMULATIVE SCORE	0.17

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:23 Clark Fork near Alberton

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	1840.0	(E)	17.9	8.24	17	32	60	10	200	70
Jul 27	2340.0	(E)	22.7	8.28	13	28	10 <	30	200	10 <
Aug 11	1260.0	(E)	20.2	8.28	9	27	10 <	10 <	200	10 <
Sep 15	1290.0	(E)	16.2	8.38	8	29	10 <	20	400	20
Oct 14	1580.0	(E)	8.5	8.29	2	29	10 <	10	100	10
Nov 18	1540.0	(E)	1.7	8.00	7	24	30	10 <	100	30
Dec 17	1180.0	(E)	0.0	8.04	14	24	150	10 <	100	150
Jan 14	1450.0	(E)	0.0	7.68	27	36	220	10 <	100	220
Feb 11	1650.0	(E)	2.4	7.79	31	63	170	10	500	180
Mar 9	1850.0	(E)		8.00	16	52	70	10 <	500	70
Mar 30	2130.0	(E)	5.4	8.03	14	36	70	10 <	200	70
Apr 13	3000.0	(E)	13.4	8.21	10	46	20	10 <	200	20
Apr 20	9410.0	(E)	9.5	7.37	8	55	50	10	300	60
May 2	5380.0	(E)	10.0	7.83	11	25	10	10 <	200	10
May 18	12900.0	(E)	10.8	7.32	7	81	40	10 <	400	40
Jun 1	12400.0	(E)	9.7	7.47	16	39	40	10 <	400	40
Jun 15	7340.0	(E)	18.5	7.71	12	30	30	10 <		30
N=	17		16	17	17	17	17	17	16	17
Max	12900.0		22.7	8.38	31	81	220	30	500	220
Min	1180.0		0.0	7.32	2	24	10 <	10 <	100	10 <
Mean	4031.8		10.4	7.94	13	39	56	10 <	256	60

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988
Station: 23 Clark Fork near Alberton

MONTANA WATER QUALITY BUREAU

GARY INGMAN

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	PH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	2107.0	20.3	8.26	15	30	30	10 <	200	35
AUG	1	1473.0	20.2	8.28	9	27	10 <	10 <	200	10 <
SEP	1	1278.0	16.2	8.38	8	29	10 <	20	400	20
OCT	1	1555.0	8.5	8.29	2	29	10 <	10	100	10
NOV	1	1543.0	1.7	8.00	7	24	30	10 <	100	30
DEC	1	1414.0	0.0	8.04	14	24	150	10 <	100	150
JAN	1	1356.0	0.0	7.68	27	36	220	10 <	100	220
FEB	1	1541.0	2.4	7.79	31	63	170	10	500	180
MAR	2	1838.0	5.4	8.02	15	44	70	10 <	350	70
APR	2	4905.0	11.5	7.79	9	51	35	10 <	250	40
MAY	2	9422.0	10.4	7.58	9	53	25	10 <	300	25
JUN	2	8272.0	14.1	7.59	14	35	35	10 <	400	35
N=	17	12	12	12	12	12	12	12	12	12
Max		9422.0	20.3	8.38	31	63	220	20	500	220
Min		1278.0	0.0	7.58	2	24	10 <	10 <	100	10 <
Mean		3058.7	9.2	7.97	13	37	64	10 <	250	68
Annual Nutrient Load (tons/year)					36.35	124.18	139.15	4.53	864.45	146.54

Frequency of Exceedence
Phosphorus Criterion 21%
Nitrogen Criterion 0%

Magnitude of Exceedence
Phosphorus Criterion 0.7 X
Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 0.15
NITROGEN 0.00

CUMULATIVE SCORE 0.15

Frequency of Exceedence
Chronic Ammonia Criterion 0%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 0.0 X
Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 0.00
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:24 Clark Fork at Superior

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7		18.3	8.41	11	23	20	10 <	100	20
Jul 27		23.2	8.38	14	26	10 <	20	100	20
Aug 12		18.4	8.30	11	23	10 <	10 <	200	10 <
Sep 15		16.1	8.48	8	23	10 <	20	400	20
Oct 15		7.5	8.05	1 <	42	10 <	10	100	10
Nov 18		2.0	8.04	6	21	10	10 <	200	10
Dec 17		0.0	8.03	4	16	80	10 <	100	80
Jan 14		0.0	7.79	21	30	220	10 <	100	220
Feb 11		2.0	7.90	23	46	150	10 <	300	150
Mar 9			8.00	12	35	50	10 <	500	50
Mar 31		5.3	7.85	8	37	60	10 <	200	60
Apr 13		13.5	8.41	6	40	20	10 <	300	20
Apr 20		8.8	7.60	8	56	70	20	400	90
May 2		8.9	8.05	10	23	20	10 <	200	20
May 18		10.3	7.46	6	59	50	10 <	300	50
Jun 1		8.8	7.57	16	41	50	10	300	60
Jun 15		17.1	7.74	12	37	40	10 <		40
N=	0	16	17	17	17	17	17	16	17
Max		23.2	8.48	23	59	220	20	500	220
Min		0.0	7.46	1 <	16	10 <	10 <	100	10 <
Mean		10.0	8.00	10	34	49	10 <	238	54

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 24 Clark Fork at Superior

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2		20.8	8.40	13	25	10	10	100	20
AUG	1		18.4	8.30	11	23	10 <	10 <	200	10 <
SEP	1		16.1	8.48	8	23	10 <	20	400	20
OCT	1		7.5	8.05	1 <	42	10 <	10	100	10
NOV	1		2.0	8.04	6	21	10	10 <	200	10
DEC	1		0.0	8.03	4	16	80	10 <	100	80
JAN	1		0.0	7.79	21	30	220	10 <	100	220
FEB	1		2.0	7.90	23	46	150	10 <	300	150
MAR	2		5.3	7.93	10	36	55	10 <	350	55
APR	2		11.2	8.01	7	48	45	10	350	55
MAY	2		9.6	7.76	8	41	35	10 <	250	35
JUN	2		13.0	7.66	14	39	45	10 <	300	50
N=	17	0	12	12	12	12	12	12	12	12
Max			20.8	8.48	23	48	220	20	400	220
Min			0.0	7.66	1 <	16	10 <	10 <	100	10 <
Mean			8.8	8.03	10	32	54	10 <	229	59

Annual Nutrient Load (tons/year)

Frequency of Exceedence	
Phosphorus Criterion	8%
Nitrogen Criterion	0%
Magnitude of Exceedence	
Phosphorus Criterion	0.6 X
Nitrogen Criterion	0.1 X
NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.05
NITROGEN	0.00
CUMULATIVE SCORE	0.05

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%
Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X
AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:25 Clark Fork above Flathead River

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	2690.0	(M)	17.9	8.36	9	19	10 <	10 <	200	10 <
Jul 27	3200.0	(M)	23	8.40	8	19	10 <	10	200	10
Aug 12	1820.0	(M)	18.9	8.35	1 <	28	10 <	10 <	200	10 <
Sep 15	1700.0	(M)	16.7	8.32	1	17	10 <	10	400	10
Oct 15	2050.0	(M)	8.2	8.11	1 <	21	10 <	10	100 <	10
Nov 18	2080.0	(M)	3.5	8.03	2	11	100	10 <	200	100
Dec 17	1740.0	(M)	1.3	8.05	1 <	11	40	10 <	100 <	40
Jan 14	2040.0	(M)	0.6	7.84	12	20	190	10 <	100 <	190
Feb 11	2130.0	(M)	1.3	7.95	14	49	120	10 <	500	120
Mar 9	2440.0	(M)		8.01	7	79	20	10 <	500	20
Mar 31	3140.0	(M)	5.6	7.89	4	34	50	10 <	200	50
Apr 13	4570.0	(M)	11.9	8.19	3	32	20	10 <	200	20
Apr 20	13800.0	(M)	9.4	7.50	6	81	70	10 <	400	70
May 2	7970.0	(M)	9.2	7.91	9	14	20	10 <	200	20
May 18	16300.0	(M)	11.4	7.56	6	49	50	10 <	200	50
Jun 2	14800.0	(M)	9	7.55	14	38	50	10 <	400	50
Jun 16	9230.0	(M)	16.4	7.75	10	25	30	10 <		30
N=	17		16	17	17	17	17	17	16	17
Max	16300.0		23.0	8.40	14	81	190	10	500	190
Min	1700.0		0.6	7.50	1 <	11	10 <	10 <	100 <	10 <
Mean	5394.1		10.3	7.99	6	32	45	10 <	238	46

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 25 Clark Fork above Flathead River

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	2895.0	20.5	8.38	9	19	10 <	10 <	200	10 <
AUG	1	2038.0	18.9	8.35	1 <	28	10 <	10 <	200	10 <
SEP	1	1782.0	16.7	8.32	1	17	10 <	10	400	10
OCT	1	2032.0	8.2	8.11	1 <	21	10 <	10	100 <	10
NOV	1	2027.0	3.5	8.03	2	11	100	10 <	200	100
DEC	1	1910.0	1.3	8.05	1 <	11	40	10 <	100 <	40
JAN	1	1851.0	0.6	7.84	12	20	190	10 <	100 <	190
FEB	1	2023.0	1.3	7.95	14	49	120	10 <	500	120
MAR	2	2565.0	5.6	7.95	6	57	35	10 <	350	35
APR	2	7178.0	10.7	7.85	5	57	45	10 <	300	45
MAY	2	12320.0	10.3	7.74	8	32	35	10 <	200	35
JUN	2	10520.0	12.7	7.65	12	32	40	10 <	400	40
N=	17	12	12	12	12	12	12	12	12	12
Max		12320.0	20.5	8.38	14	57	190	10	500	190
Min		1782.0	0.6	7.65	1 <	11	10 <	10 <	100 <	10 <
Mean		4095.1	9.2	8.02	6	29	50	10 <	229	52
Annual Nutrient Load (tons/year)					28.24	133.62	174.13	3.14	1044.34	177.27

Frequency of Exceedence
Phosphorus Criterion 8%
Nitrogen Criterion 0%

Magnitude of Exceedence
Phosphorus Criterion 0.6 X
Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 0.05
NITROGEN 0.00

CUMULATIVE SCORE 0.05

Frequency of Exceedence
Chronic Ammonia Criterion 0%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 0.0 X
Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 0.00
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:26 Flathead River near mouth

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)		Total P Conc. (ug/l as P)		NO3+NO2 Conc. (ug/l as N)		Total NH3+ NH4 Conc. (ug/l as N)		Total KJL-N Conc. (ug/l as N)		TSIN Conc. (ug/l as N)	
Jul 7	6110.0	(M)	17.2	8.03	2		5		10	<	10	<	100		10	<
Jul 27	10300.0	(M)	23.4	8.41	1	<	6		10	<	10		200		10	
Aug 12	5190.0	(M)	20.7	8.12	1	<	9		10	<	10	<	200		10	<
Sep 15	11500.0	(M)	18.1	8.36	1	<	9		10	<	10		300		10	
Oct 15	10900.0	(M)	11.2	7.96	1	<	14		30		10	<	100	<	30	
Nov 18	10300.0	(M)	5.5	8.00	1	<	2		40		10	<	100		40	
Dec 17	12400.0	(M)	2.0	7.96	1	<	2		30		10	<	100		30	
Jan 14	6600.0	(E)	0.0	7.81	1	<	7		40		10	<	100		40	
Feb 11	5820.0	(M)	2.5	7.77	5		46		90		10	<	500		90	
Mar 9	11900.0	(M)		7.90	1	<	40		20		10	<	400		20	
Mar 31	12500.0	(M)	4.0	7.82	1	<	3		40		10	<	100	<	40	
Apr 13	11900.0	(M)	11.3	8.05	1	<	6		20		10	<	100	<	20	
Apr 20	10700.0	(M)	11.5	7.82	1	<	6		10	<	10	<	100		10	<
May 3	12600.0	(M)	9.9	7.92	4		6		10	<	10	<	100	<	10	<
May 19	7360.0	(M)	12.0	7.64	1	<	18		20		10	<	100	<	20	
Jun 2	4400.0	(M)	15.0	8.24	2		8		20		10	<	200		20	
Jun 16	6820.0	(M)	22.0	8.18	1		10		10		10	<			10	
N=	17		16	17	17		17		17		17		16		17	
Max	12600.0		23.4	8.41	5		46		90		10		500		90	
Min	4400.0		0.0	7.64	1	<	2		10	<	10	<	100	<	10	<
Mean	9252.9		11.6	8.00	1	<	12		21		10	<	144		22	

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 26 Flathead River near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	6943.0	20.3	8.22	1	6	10 <	10 <	150	10 <
AUG	1	7921.0	20.7	8.12	1 <	9	10 <	10 <	200	10 <
SEP	1	11410.0	18.1	8.36	1 <	9	10 <	10	300	10
OCT	1	10870.0	11.2	7.96	1 <	14	30	10 <	100 <	30
NOV	1	9600.0	5.5	8.00	1 <	2	40	10 <	100	40
DEC	1	9855.0	2.0	7.96	1 <	2	30	10 <	100	30
JAN	1	6103.0	0.0	7.81	1 <	7	40	10 <	100	40
FEB	1	9466.0	2.5	7.77	5	46	90	10 <	500	90
MAR	2	12690.0	4.0	7.86	1 <	22	30	10 <	200	30
APR	2	11870.0	11.4	7.94	1 <	6	10	10 <	100 <	10
MAY	2	9352.0	11.0	7.78	2	12	10	10 <	100 <	10
JUN	2	10220.0	18.5	8.21	2	9	15	10 <	200	15
N=	17	12	12	12	12	12	12	12	12	12
Max		12690.0	20.7	8.36	5	46	90	10	500	90
Min		6103.0	0.0	7.77	1 <	2	10 <	10 <	100 <	10 <
Mean		9691.7	10.4	8.00	1 <	12	25	10 <	154	25
Annual Nutrient Load (tons/year)					6.95	115.15	229.28	9.22	1441.49	238.51

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.2 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	8800.0 (M)	19.5	8.27	1	9	10 <	10 <	200	10 <
Jul 27	13600.0 (M)	23.3	8.20	1	9	10 <	10	200	10
Aug 13	7260.0 (M)	12.9	8.12	1 <	8	10 <	10 <	200	10 <
Sep 15	13600.0 (M)	18.5	8.25	1	9	10 <	10 <	200	10 <
Oct 15	12900.0 (M)	11.2	8.03	1 <	14	10 <	10	100 <	10
Nov 18	12700.0 (M)		7.98	1 <	3	10 <	10 <	200	10 <
Dec 17	14300.0 (M)	2.0	7.91	1 <	4	30	10 <	200	30
Jan 14	8710.0 (M)								
Feb 11	7970.0 (M)	2.0	7.88	3	26	70	10 <	400	70
Mar 9	14500.0 (M)		7.94	1 <	7	10	10 <	400	10
Mar 31	16200.0 (M)	5.2	7.89	1 <	9	40	10 <	100	40
Apr 13	16600.0 (M)	11.0	8.11	1 <	12	20	10 <	100	20
Apr 20	25300.0 (M)	10.7	7.72	2	43	40	10 <	400	40
May 3	21100.0 (M)	9.4	7.86	4	12	10 <	10 <	300	10 <
May 18	26600.0 (M)	12.4	7.73	1	26	40	10 <	200	40
Jun 2	19900.0 (M)	9.9	7.77	9	28	40	10 <	300	40
Jun 16	13400.0 (M)	18.8	7.91	4	20	20	10 <		20
N=	17	14	16	16	16	16	16	15	16
Max	26600.0	23.3	8.27	9	43	70	10	400	70
Min	7260.0	2.0	7.72	1 <	3	10 <	10 <	100 <	10 <
Mean	15025.9	11.9	7.97	2	15	19	10 <	227	21

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 27 Clark Fork above Thompson Falls Reservoir

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	9715.0	21.4	8.24	1	9	10 <	10 <	200	10 <
AUG	1	9813.0	12.9	8.12	1 <	8	10 <	10 <	200	10 <
SEP	1	13300.0	18.5	8.25	1	9	10 <	10 <	200	10 <
OCT	1	12890.0	11.2	8.03	1 <	14	10 <	10	100 <	10
NOV	1	11580.0		7.98	1 <	3	10 <	10 <	200	10 <
DEC	1	11760.0	2.0	7.91	1 <	4	30	10 <	200	30
JAN	0	7959.0								
FEB	1	11510.0	2.0	7.88	3	26	70	10 <	400	70
MAR	2	15590.0	5.2	7.92	1 <	8	25	10 <	250	25
APR	2	19510.0	10.9	7.92	1	28	30	10 <	250	30
MAY	2	22190.0	10.9	7.80	3	19	20	10 <	250	20
JUN	2	21210.0	14.4	7.84	7	24	30	10 <	300	30
N=	16	12	10	11	11	11	11	11	11	11
Max		22190.0	21.4	8.25	7	28	70	10	400	70
Min		7959.0	2.0	7.80	1 <	3	10 <	10 <	100 <	10 <
Mean		13918.9	10.9	7.99	1	14	19	10 <	223	20
Annual Nutrient Load (tons/year)					21.85	198.12	258.68	10.77	2970.40	269.45

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.3 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:28 Clark Fork below Thompson Falls Dam

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 7	9268.0 (M)	19.2	8.20	2	11	10	10	100	20
Jul 27	13470.0 (M)	21.9	8.17	9	13	10 <	20	200	20
Aug 13	7577.0 (M)	20.2	8.12	1 <	8	10 <	10 <	200	10 <
Sep 15	14589.0 (M)	18.3	8.10	4	19	10 <	20	300	20
Oct 15	14085.0 (M)	11.3	8.04	1 <	14	10 <	10	100 <	10 <
Nov 18	13069.0 (M)		7.99	1 <	3	20	10 <	100	20
Dec 17	14529.0 (M)	1.8	7.91	1 <	2	20	10 <	100	20
Jan 14	9522.0 (M)	0.0	7.82	1 <	7	60	10 <	100	60
Feb 11	8814.0 (M)	1.7	7.95	2	15	70	10 <	300	70
Mar 9	14903.0 (M)		7.97	1 <	3	10	10 <	400	10
Mar 31	16234.0 (M)	5.0	7.88	1 <	7	30	10 <	100 <	30
Apr 13	17439.0 (M)	9.5	7.83	1 <	10	20	10 <	100	20
Apr 20	24655.0 (M)	10.7	7.65	1	34	40	10 <	400	40
May 3	21570.0 (M)	9.3	7.85	4	14	10 <	10 <	200	10 <
May 18	26441.0 (M)	12.7	7.64	1	26	40	10 <	200	40
Jun 2	20366.0 (M)	10.1	7.62	6	21	40	10 <	300	40
Jun 16	15348.0 (M)	18.8	7.87	4	20	20	10 <		20
N=	17	15	17	17	17	17	17	16	17
Max	26441.0	21.9	8.20	9	34	70	20	400	70
Min	7577.0	0.0	7.62	1 <	2	10 <	10 <	100 <	10 <
Mean	15404.6	11.4	7.92	2	13	22	10 <	188	25

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 28 Clark Fork below Thompson Falls Dam

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	10170.0	20.6	8.19	6	12	10 <	15	150	20
AUG	1	10274.0	20.2	8.12	1 <	8	10 <	10 <	200	10 <
SEP	1	13590.0	18.3	8.10	4	19	10 <	20	300	20
OCT	1	13364.0	11.3	8.04	1 <	14	10 <	10 <	100 <	10 <
NOV	1	11670.0		7.99	1 <	3	20	10 <	100	20
DEC	1	12190.0	1.8	7.91	1 <	2	20	10 <	100	20
JAN	1	8420.0	0.0	7.82	1 <	7	60	10 <	100	60
FEB	1	11615.0	1.7	7.95	2	15	70	10 <	300	70
MAR	2	15675.0	5.0	7.93	1 <	5	20	10 <	200	20
APR	2	19789.0	10.1	7.74	1	22	30	10 <	250	30
MAY	2	22444.0	11.0	7.75	3	20	20	10 <	200	20
JUN	2	21604.0	14.5	7.75	5	21	30	10 <	300	30
N=	17	12	11	12	12	12	12	12	12	12
Max		22444.0	20.6	8.19	6	22	70	20	300	70
Min		8420.0	0.0	7.74	1 <	2	10 <	10 <	100 <	10 <
Mean		14233.8	10.4	7.94	2	12	23	10 <	183	26
Annual Nutrient Load (tons/year)					25.04	191.56	306.89	34.72	2719.14	345.86

Frequency of Exceedence
- Phosphorus Criterion 0%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.2 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.00
- NITROGEN 0.00

CUMULATIVE SCORE 0.00

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE: Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:29 Clark Fork at Noxon Bridge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 8	12200.0	(M)	18.5	7.94	6	9	10	20	100	30
Jul 28	15900.0	(M)	16.7	7.90	8	12	70	20	200	90
Aug 13	4380.0	(M)	18.9	7.89	3	19	20	20	200	40
Sep 16	16500.0	(M)	18.8	8.04	1	14	10 <	20	300	20
Oct 15	10200.0	(M)	14.3	7.98	1 <	17	10 <	20	100 <	20
Nov 19	15100.0	(M)		7.89	1 <	5	10 <	20	100	20
Dec 17	12900.0	(M)	3.4	7.91	1 <	3	20	10 <	100	20
Jan 14	11200.0	(M)	0.8	7.86	1 <	5	30	10 <	100 <	30
Feb 11	8700.0	(M)	0.8	7.77	1	9	80	10 <	300	80
Mar 9	15600.0	(M)		7.93	1 <	1	10	10 <	400	10
Mar 31	20000.0	(M)	6.0	7.90	1 <	4	30	10 <	100 <	30
Apr 14	17900.0	(M)	7.0	7.88	1 <	7	30	10 <	100 <	30
Apr 21	30800.0	(M)	10.2	7.76	1 <	7	10 <	10 <	200	10 <
May 3	20100.0	(M)	9.8	7.80	5	13	20	10 <	200	20
May 19	24200.0	(M)	12.7	7.67	1 <	18	20	10 <	100	20
Jun 2	21400.0	(M)	14.2	7.58	3	10	20	20	200	40
Jun 16	17200.0	(M)	16.2	7.74	2	16	20	10 <		20
N=	17		15	17	17	17	17	17	16	17
Max	30800.0		18.9	8.04	8	19	80	20	400	90
Min	4380.0		0.8	7.58	1 <	1	10 <	10 <	100 <	10 <
Mean	16134.1		11.2	7.85	2	10	22	10 <	150	31

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 29 Clark Fork at Noxon Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	9628.0	17.6	7.92	7	11	40	20	150	60
AUG	1	9230.0	18.9	7.89	3	19	20	20	200	40
SEP	1	12730.0	18.8	8.04	1	14	10 <	20	300	20
OCT	1	12260.0	14.3	7.98	1 <	17	10 <	20	100 <	20
NOV	1	11240.0		7.89	1 <	5	10 <	20	100	20
DEC	1	11110.0	3.4	7.91	1 <	3	20	10 <	100	20
JAN	1	7625.0	0.8	7.86	1 <	5	30	10 <	100 <	30
FEB	1	11040.0	0.8	7.77	1	9	80	10 <	300	80
MAR	2	15540.0	6.0	7.92	1 <	3	20	10 <	200	20
APR	2	20970.0	8.6	7.82	1 <	7	15	10 <	100	15
MAY	2	22650.0	11.3	7.74	3	16	20	10 <	150	20
JUN	2	20970.0	15.2	7.66	3	13	20	10	200	30
JUN		20970.0								
N=	17	13	11	12	12	12	12	12	12	12
Max		22650.0	18.9	8.04	7	19	80	20	300	80
Min		7625.0	0.8	7.66	1 <	3	10 <	10 <	100 <	15
Mean		14304.8	10.5	7.87	1	10	22	10 <	150	31
Annual Nutrient Load (tons/year)					18.78	139.41	275.07	107.71	2069.39	382.78

Frequency of Exceedence
- Phosphorus Criterion 0%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.2 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.00
- NITROGEN 0.00

CUMULATIVE SCORE 0.00

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:3O Clark Fork below Cabinet Gorge Dam

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+ NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 8	16700.0	(M)	18.4	7.89	2	8	10 <	10 <	100	10 <
Jul 28	19600.0	(M)	19.1	7.90	5	13	30	10 <	100	30
Aug 13	7230.0	(M)	20.2	8.03	1 <	14	10 <	10	200	10
Sep 16	19700.0	(M)	18.7	8.01	2	16	10 <	10	300	10
Oct 15	12500.0	(M)	14.3	7.93	1 <	26	10 <	20	100 <	20
Nov 19	16100.0	(M)		7.87	1 <	5	40	10	100	50
Dec 17	15700.0	(M)	3.5	7.90	1 <	4	20	10 <	100	20
Jan 14	12700.0	(M)	1.3	7.84	1 <	5	30	10 <	100	30
Feb 11	9820.0	(M)	1.0	7.85	1	10	70	10 <	200	70
Mar 9	17800.0	(M)		7.90	1 <	1	20	10 <	400	20
Mar 31	21600.0	(M)	5.9	7.90	1 <	4	30	10 <	100 <	30
Apr 14	22900.0	(M)	7.9	7.79	1 <	7	20	10 <	100 <	20
Apr 21	36100.0	(M)	9.8	7.82	1 <	6	10 <	10 <	200	10 <
May 3	23700.0	(M)	9.8	7.78	5	11	20	10 <	100	20
May 19	27900.0	(M)	12.2	7.77	1 <	11	20	10 <	100	20
Jun 2	25300.0	(M)	13.9	7.64	2	8	20	10 <	200	20
Jun 16	21800.0	(M)	16.2	7.80	4	16	30	10 <		30
N=	17		15	17	17	17	17	17	16	17
Max	36100.0		20.2	8.03	5	26	70	20	400	70
Min	7230.0		1.0	7.64	1 <	1	10 <	10 <	100 <	10 <
Mean	19244.1		11.5	7.86	1	10	21	10 <	138	24

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

Ortho P,NO3+NO2 and NH3+NH4 data for October through June sampling dates are dissolved concentrations (0.45 u filtration).

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 30 Clark Fork below Cabinet Gorge Dam

Monthly Average Values

Month	N=	Streamflow (cfs)	Water Temp. (deg.C)	pH	Ortho P Conc. (ug/l as P)	Total P Conc. (ug/l as P)	NO3+NO2 Conc. (ug/l as N)	Total NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	2	12180.0	18.8	7.90	4	11	15	10 <	100	15
AUG	1	11390.0	20.2	8.03	1 <	14	10 <	10	200	10
SEP	1	14770.0	18.7	8.01	2	16	10 <	10	300	10
OCT	1	13990.0	14.3	7.93	1 <	26	10 <	20	100 <	20
NOV	1	12980.0		7.87	1 <	5	40	10	100	50
DEC	1	12990.0	3.5	7.90	1 <	4	20	10 <	100	20
JAN	1	8986.0	1.3	7.84	1 <	5	30	10 <	100	30
FEB	1	12880.0	1.0	7.85	1	10	70	10 <	200	70
MAR	2	17830.0	5.9	7.90	1 <	3	25	10 <	200	25
APR	2	25220.0	8.9	7.81	1 <	7	10	10 <	100	10
MAY	2	26990.0	11.0	7.78	3	11	20	10 <	100	20
JUN	2	24630.0	15.1	7.72	3	12	25	10 <	200	25
N=	17	12	11	12	12	12	12	12	12	12
Max		26990.0	20.2	8.03	4	26	70	20	300	70
Min		8986.0	1.0	7.72	1 <	3	10 <	10 <	100 <	10
Mean		16236.3	10.8	7.88	1	10	21	10 <	142	25
Annual Nutrient Load (tons/year)					18.53	162.24	322.01	55.33	2258.83	377.34

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.2 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

A P P E N D I X D

FY 1989

CLARK FORK BASIN

NUTRIENTS MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:OO Silver Bow Creek above Butte WWTP

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	6.3 (I)	12.4	7.72	9	58	1770	20	200	1790
Aug 15	8.1 (I)	9.7	7.88	19	77	1740	40	400	1780
Sep 12	8.1 (I)	7.3	6.41	21	92	1560	80	500	1640
Oct 11	8.3 (I)	6.2	7.15	13	82	1780	60	400	1840
Nov 14	7.7 (I)	3.8	6.99	10	111	1840	90	600	1930
Dec 12	7.3 (I)	4.6	7.33	12	110	1910	90	500	2000
Jan 17	6.7 (I)	2.3	7.27	12	103	2000	110	500	2110
Mar 20	11.5 (I)	2.9	6.92	24	129	1560	130	300	1690
Apr 5	13.8 (I)	4.1	7.15	55	107	1350	140	100	1490
Apr 18	19.8 (I)	2.6	7.22	39	94	5400	40	200	5440
May 2	16.2 (I)	7.0	7.42	18	76	1110	60	1000	1170
May 16	22.6 (I)	7.4	7.58	35	123	720	40	600	760
May 30	15.5 (I)	5.9	7.86	24	83	1080	40	500	1120
Jun 14	10.1 (I)	10.8	7.66	19	80	1530	40	400	1570
Jun 26	9.2 (I)	8.7	7.47	16	68	1620	20	200	1640
N=	15	15	15	15	15	15	15	15	15
Max	22.6	12.4	7.88	55	129	5400	140	1000	5440
Min	6.3	2.3	6.41	9	58	720	20	100	760
Mean	11.4	6.4	7.34	22	93	1798	67	427	1865

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 00 Silver Bow Creek above Butte WWTP

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	6.3	12.4	7.72	9	58	1770	20	200	1790
AUG	1	8.1	9.7	7.88	19	77	1740	40	400	1780
SEP	1	8.1	7.3	6.41	21	92	1560	80	500	1640
OCT	1	8.3	6.2	7.15	13	82	1780	60	400	1840
NOV	1	7.7	3.8	6.99	10	111	1840	90	600	1930
DEC	1	7.3	4.6	7.33	12	110	1910	90	500	2000
JAN	1	6.7	2.3	7.27	12	103	2000	110	500	2110
FEB	0									
MAR	1	11.5	2.9	6.92	24	129	1560	130	300	1690
APR	2	16.8	3.4	7.19	47	101	3375	90	150	3465
MAY	3	18.1	6.8	7.62	26	94	970	47	700	1017
JUN	2	9.7	9.8	7.57	18	74	1575	30	300	1605
N=	15	11	11	11	11	11	11	11	11	11
Max		18.1	12.4	7.88	47	129	3375	130	700	3465
Min		6.3	2.3	6.41	9	58	970	20	150	1017
Mean		9.9	6.3	7.28	19	94	1825	72	414	1897
Annual Nutrient Load (tons/year)					0.20	0.85	16.57	0.65	3.72	17.22

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	97%

Magnitude of Exceedence	
Phosphorus Criterion	1.9 X
Nitrogen Criterion	1.9 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	1.87
NITROGEN	1.84
CUMULATIVE SCORE	3.71

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:00.5 Butte Metro WWTP discharge

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	7.2 (I)	16.7	6.99	3990	3540	50	10800	12900	10850
Aug 15	7.6 (I)	17.9	7.74	3700	3440	1470	6550	8600	8020
Sep 12	9.4 (I)	16.2	6.21	2860	3330	1880	4930	6800	6810
Oct 11	8.0 (I)	16.0	6.40	3790	3980	620	9090	10500	9710
Nov 14	7.6 (I)	12.9	6.96	3140	3190	260	9340	10900	9600
Dec 12	7.7 (I)	11.4	7.07	3030	4470	240	11500	11900	11740
Jan 17	7.6 (I)	9.0	7.08	2580	3810	130	11000	12300	11130
Mar 20	7.6 (I)	8.6	7.12	2540	3830	160	11300	13400	11460
Apr 5	8.0 (I)	8.6	7.07	2200	3390	280	10710	11000	10990
Apr 18	8.5 (I)	10.0	7.08	2360	3350	330	9710	11900	10040
May 2	8.3 (I)	10.6	7.20	3030	3700	160	11200	13800	11360
May 16	8.3 (I)	11.7	7.09	3510	4300	590	9150	11300	9740
May 30	8.3 (I)	11.7	7.37	2970	3540	270	9640	12800	9910
Jun 14	7.2 (I)	13.8	7.20	2800	3800	150	10100	12400	10250
Jun 26	6.7 (I)	14.0	7.20	3210	3250	870	11100	11700	11970
N=	15	15	15	15	15	15	15	15	15
Max	9.4	17.9	7.74	3990	4470	1880	11500	13800	11970
Min	6.7	8.6	6.21	2200	3190	50	4930	6800	6810
Mean	7.9	12.6	7.05	3047	3661	497	9741	11480	10239

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

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CLARK FORK BASIN MONITORING - FY 1989
Station: 00.5 Butte Metro WWTP discharge

MONTANA WATER QUALITY BUREAU

GARY INGMAN

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	8.5	16.7	6.99	3990	3540	50	10800	12900	10850
AUG	1	8.6	17.9	7.74	3700	3440	1470	6550	8600	8020
SEP	1	8.9	16.2	6.21	2860	3330	1880	4930	6800	6810
OCT	1	7.7	16.0	6.40	3790	3980	620	9090	10500	9710
NOV	1	6.8	12.9	6.96	3140	3190	260	9340	10900	9600
DEC	1	6.7	11.4	7.07	3030	4470	240	11500	11900	11740
JAN	1	7.6	9.0	7.08	2580	3810	130	11000	12300	11130
FEB	0									
MAR	1	7.6	8.6	7.12	2540	3830	160	11300	13400	11460
APR	2	8.3	9.3	7.08	2280	3370	305	10210	11450	10515
MAY	3	8.3	11.3	7.22	3170	3847	340	9997	12633	10337
JUN	2	6.9	13.9	7.20	3005	3525	510	10600	12050	11110
N=	15	11	11	11	11	11	11	11	11	11
Max		8.9	17.9	7.74	3990	4470	1880	11500	13400	11740
Min		6.7	8.6	6.21	2280	3190	50	4930	6800	6810
Mean		7.8	13.0	7.01	3099	3667	542	9574	11221	10117
Annual Nutrient Load (tons/year)					22.04	25.92	4.03	67.13	79.03	71.15

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	100%

Magnitude of Exceedence

Phosphorus Criterion	73.3 X
Nitrogen Criterion	10.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	73.33
NITROGEN	10.12
CUMULATIVE SCORE	83.45

Frequency of Exceedence

Chronic Ammonia Criterion	82%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	4.8 X
Acute Ammonia Criterion	0.5 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	3.90
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:01 Silver Bow Creek below Colorado Tailings

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	15.0 (M)	14.3	7.10	1070	1230	2730	1590	2800	4320
Aug 15	21.0 (M)	12.8	7.78	1100	1350	2110	1780	3200	3890
Sep 12	18.0 (M)	10.1	6.85	920	1340	1920	1760	2400	3680
Oct 11	16.0 (M)	9.1	7.20	1180	1490	1550	3010	3700	4560
Nov 14	13.0 (M)	6.1	7.07	935	1890	1350	3620	4700	4970
Dec 12	20.6 (I)	6.1	7.33	921	1610	1440	4230	4800	5670
Jan 17		3.8	7.39	879	1750	1320	4100	5000	5420
Mar 20		4.8	7.26	661	1470	1110	4000	3400	5110
Apr 5		5.5	7.32	571	1450	1060	3690	3500	4750
Apr 18		4.9	7.23	526	1040	1290	2600	2800	3890
May 2		8.2	7.59	834	1320	860	3120	5200	3980
May 16		8.9	7.49	709	1330	750	2100	3000	2850
May 30		7.8	7.42	691	1150	900	3000	4000	3900
Jun 14		12.4	7.50	854	1190	1160	3620	4800	4780
Jun 26		11.0	7.39	881	1210	1500	3740	4200	5240
N=	6	15	15	15	15	15	15	15	15
Max	21.0	14.3	7.78	1180	1890	2730	4230	5200	5670
Min	13.0	3.8	6.85	526	1040	750	1590	2400	2850
Mean	17.3	8.4	7.33	849	1388	1403	3064	3833	4467

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 01 Silver Bow Creek below Colorado Tailings

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	16.5	14.3	7.10	1070	1230	2730	1590	2800	4320
AUG	1	18.7	12.8	7.78	1100	1350	2110	1780	3200	3890
SEP	1	16.9	10.1	6.85	920	1340	1920	1760	2400	3680
OCT	1	16.0	9.1	7.20	1180	1490	1550	3010	3700	4560
NOV	1	13.0	6.1	7.07	935	1890	1350	3620	4700	4970
DEC	1	20.6	6.1	7.33	921	1610	1440	4230	4800	5670
JAN	1	ERR	3.8	7.39	879	1750	1320	4100	5000	5420
FEB	0									
MAR	1	ERR	4.8	7.26	661	1470	1110	4000	3400	5110
APR	2	ERR	5.2	7.28	549	1245	1175	3145	3150	4320
MAY	3	ERR	8.3	7.50	745	1267	837	2740	4067	3577
JUN	2	ERR	11.7	7.45	868	1200	1330	3680	4500	5010
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	14.3	7.78	1180	1890	2730	4230	5000	5670
Min		ERR	3.8	6.85	549	1200	837	1590	2400	3577
Mean		ERR	8.4	7.29	893	1440	1534	3060	3792	4593
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	100%

Magnitude of Exceedence

Phosphorus Criterion	28.8 X
Nitrogen Criterion	4.6 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	28.80
NITROGEN	4.59
CUMULATIVE SCORE	33.40

Frequency of Exceedence

Chronic Ammonia Criterion	82%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	1.6 X
Acute Ammonia Criterion	0.2 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	1.33
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:02 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	13.5	(I)	16.4	8.11	300	610	2140	40	1000	2180
Aug 15	11.7	(I)	12.7	7.95	597	912	3060	20	1100	3080
Sep 12	21.0	(I)	7.8	7.35	352	833	3370	270	1000	3640
Oct 11	19.4	(I)	7.9	7.55	514	920	2770	630	1300	3400
Nov 14	24.6	(I)	2.9	7.40	323	689	1700	1960	2500	3660
Dec 12	23.2	(I)	3.1	7.53	380	874	1500	2330	2600	3830
Jan 17			-0.4	7.50	645	1230	1500	3890	4100	5390
Mar 20	24.9	(I)	3.9	7.51	123	977	960	3540	3100	4500
Apr 5	33.9	(I)	4.2	7.68	76	752	840	2060	1700	2900
Apr 18	50.7	(I)	4.1	7.30	107	652	1130	1030	1100	2160
May 2	44.2	(I)	8.6	8.14	157	680	760	1110	2600	1870
May 16	46.0	(I)	9.6	7.71	134	830	1080	840	1600	1920
May 30	32.8	(I)	8.3	7.94	217	738	1090	1550	2400	2640
Jun 14	30.8	(I)	12.8	7.99	275	656	1430	940	1500	2370
Jun 26	23.7	(I)	12.3	8.28	306	750	2800	1000	1700	3800
N=	14		15	15	15	15	15	15	15	15
Max	50.7		16.4	8.28	645	1230	3370	3890	4100	5390
Min	11.7		-0.4	7.30	76	610	760	20	1000	1870
Mean	28.6		7.6	7.73	300	807	1742	1414	1953	3156

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	13.5	16.4	8.11	300	610	2140	40	1000	2180
AUG	1	11.7	12.7	7.95	597	912	3060	20	1100	3080
SEP	1	21.0	7.8	7.35	352	833	3370	270	1000	3640
OCT	1	19.4	7.9	7.55	514	920	2770	630	1300	3400
NOV	1	24.6	2.9	7.40	323	689	1700	1960	2500	3660
DEC	1	23.2	3.1	7.53	380	874	1500	2330	2600	3830
JAN	1		-0.4	7.50	645	1230	1500	3890	4100	5390
FEB	0									
MAR	1	24.9	3.9	7.51	123	977	960	3540	3100	4500
APR	2	42.3	4.2	7.49	92	702	985	1545	1400	2530
MAY	3	41.0	8.8	7.93	169	749	977	1167	2200	2143
JUN	2	27.3	12.6	8.14	291	703	2115	970	1600	3085
N=	15	10	11	11	11	11	11	11	11	11
Max		42.3	16.4	8.14	645	1230	3370	3890	4100	5390
Min		11.7	-0.4	7.35	92	610	960	20	1000	2143
Mean		24.9	7.3	7.68	344	836	1916	1487	1991	3403
Annual Nutrient Load (tons/year)					5.52	16.10	35.29	28.74	38.32	64.03

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	100%

Magnitude of Exceedence

Phosphorus Criterion	16.7 X
Nitrogen Criterion	3.4 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	16.73
NITROGEN	3.40
CUMULATIVE SCORE	20.13

Frequency of Exceedence

Chronic Ammonia Criterion	42%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.8 X
Acute Ammonia Criterion	0.1 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.36
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	28.6 (I)	17.4	8.37	284	330	980	10	< 1100	980
Aug 15	16.3 (I)	14.1	8.10	123	353	1490	20	1000	1510
Sep 12	29.2 (I)	6.9	8.00	138	736	2160	60	1300	2220
Oct 11	26.6 (I)	7.9	7.70	174	443	1920	40	700	1960
Nov 14	31.1 (I)	1.7	7.48	153	425	1680	750	1500	2430
Dec 12	34.3 (I)	1.1	7.58	220	998	1540	1210	1900	2750
Jan 17	27.1 (I)	0.4	7.49	251	705	1590	1640	1600	3230
Mar 20	34.7 (I)	4.7	7.52	65	578	990	2230	1800	3220
Apr 5	45.6 (I)	4.8	7.91	36	543	960	1530	1200	2490
Apr 18	68.3 (I)	6.8	7.89	62	398	670	630	600	1300
May 2	68.5 (I)	9.1	8.45	48	324	750	420	1800	1170
May 16	90.0 (I)	9.5	7.73	60	697	790	260	1300	1050
May 30	63.0 (I)	8.8	8.09	64	321	850	370	1000	1220
Jun 14	54.9 (I)	13.8	8.50	92	275	790	30	500	820
Jun 26	40.4 (I)	11.7	8.52	82	259	1140	30	500	1170
N=	15	15	15	15	15	15	15	15	15
Max	90.0	17.4	8.52	284	998	2160	2230	1900	3230
Min	16.3	0.4	7.48	36	259	670	10	< 500	820
Mean	43.9	7.9	7.96	123	492	1220	615	1187	1835

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGHAM

Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	28.6	17.4	8.37	284	330	980	10 <	1100	980
AUG	1	16.3	14.1	8.10	123	353	1490	20	1000	1510
SEP	1	29.2	6.9	8.00	138	736	2160	60	1300	2220
OCT	1	26.6	7.9	7.70	174	443	1920	40	700	1960
NOV	1	31.1	1.7	7.48	153	425	1680	750	1500	2430
DEC	1	34.3	1.1	7.58	220	998	1540	1210	1900	2750
JAN	1	27.1	0.4	7.49	251	705	1590	1640	1600	3230
FEB	0									
MAR	1	34.7	4.7	7.52	65	578	990	2230	1800	3220
APR	2	57.0	5.8	7.90	49	471	815	1080	900	1895
MAY	3	73.8	9.1	8.09	57	447	797	350	1367	1147
JUN	2	47.7	12.8	8.51	87	267	965	30	500	995
N=	15	11	11	11	11	11	11	11	11	11
Max		73.8	17.4	8.51	284	998	2160	2230	1900	3230
Min		16.3	0.4	7.48	49	267	797	10 <	500	980
Mean		36.9	7.4	7.89	146	523	1357	674	1242	2031
Annual Nutrient Load (tons/year)					4.25	17.15	41.23	23.04	41.17	64.27

Frequency of Exceedence

Phosphorus Criterion	100%
Nitrogen Criterion	86%

Magnitude of Exceedence

Phosphorus Criterion	10.5 X
Nitrogen Criterion	2.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	10.46
NITROGEN	1.75
CUMULATIVE SCORE	12.21

Frequency of Exceedence

Chronic Ammonia Criterion	17%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.4 X
Acute Ammonia Criterion	0.1 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.06
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:D4 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	22.6 (I)	21.2	9.39	109	151	40	50	800	90
Aug 15	5.7 (I)	19.4	8.30	137	167	60	30	800	90
Sep 13	4.6 (I)	11.3	8.60	76	113	20	30	700	50
Oct 11	17.7 (I)	13.2	8.45	24	50	10	10 <	500	10
Nov 14	12.5 (I)	1.0	7.66	9	40	10 <	10 <	500	10 <
Dec 12	19.0 (I)	2.5	8.01	13	55	460	90	400	550
Jan 17	23.4 (I)	0.1	8.02	14	96	930	230	400	1160
Mar 20	78.9 (I)	1.8	7.65	30	320	570	650	1000	1220
Apr 5	34.2 (I)	4.6	7.92	13	212	760	320	500	1080
Apr 18	77.2 (I)	8.6	8.88	1	144	280	10 <	500	280
May 2	67.9 (I)	11.8	8.82	4	146	40	10 <	2100	40
May 16	77.9 (I)	12.4	9.07	15	110	40	20	500	60
May 30	66.0 (I)	10.7	8.96	11	100	100	30	600	130
Jun 14	28.1 (I)	20.1	9.70	8	62	10	20	400	30
Jun 26	36.0 (I)	16.8	9.76	14	63	20	10	300	30
N=	15	15	15	15	15	15	15	15	15
Max	78.9	21.2	9.76	137	320	930	650	2100	1220
Min	4.6	0.1	7.65	1	40	10 <	10 <	300	10 <
Mean	38.1	10.4	8.61	32	122	223	99	667	321

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	22.6	21.2	9.39	109	151	40	50	800	90
AUG	1	5.7	19.4	8.30	137	167	60	30	800	90
SEP	1	4.6	11.3	8.60	76	113	20	30	700	50
OCT	1	17.7	13.2	8.45	24	50	10	10 <	500	10
NOV	1	12.5	1.0	7.66	9	40	10 <	10 <	500	10 <
DEC	1	19.0	2.5	8.01	13	55	460	90	400	550
JAN	1	23.4	0.1	8.02	14	96	930	230	400	1160
FEB	0									
MAR	1	78.9	1.8	7.65	30	320	570	650	1000	1220
APR	2	55.7	6.6	8.40	7	178	520	160	500	680
MAY	3	70.6	11.6	8.95	10	119	60	17	1067	77
JUN	2	32.1	18.5	9.73	11	63	15	15	350	30
N=	15	11	11	11	11	11	11	11	11	11
Max		78.9	21.2	9.73	137	320	930	650	1067	1220
Min		4.6	0.1	7.65	7	40	10 <	10 <	350	10 <
Mean		31.2	9.7	8.47	40	123	244	116	638	360
Annual Nutrient Load (tons/year)					0.71	4.57	9.17	5.85	20.85	15.02

Frequency of Exceedence
- Phosphorus Criterion 82%
- Nitrogen Criterion 23%

Magnitude of Exceedence
- Phosphorus Criterion 2.5 X
- Nitrogen Criterion 0.4 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 2.01
- NITROGEN 0.08

CUMULATIVE SCORE 2.09

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.2 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE: Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:05 Mill-Willow Bypass at mouth

Instantaneous Values

Date	Streamflow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	9.6 (I)	20.5	8.16	11	38	50	70	700	120
Aug 15	9.7 (I)	21.6	8.08	21	32	100	80	600	180
Sep 12	9.2 (I)	15.9	7.90	11	43	110	110	600	220
Oct 11	14.6 (I)	15.0	7.45	7	28	60	60	500	120
Nov 14	15.9 (I)	4.1	7.76	5	30	10	90	500	100
Dec 12	18.9 (I)	6.1	8.05	6	24	190	80	300	270
Jan 17	17.1 (I)	2.1	8.00	6	19	270	110	100	380
Mar 20	22.9 (I)	9.0	7.97	2	69	260	110	100	370
Apr 5	23.3 (I)	9.8	8.19	6	53	130	60	100	190
Apr 18	34.9 (I)	12.7	8.42	1 <	38	60	30	200	90
May 2	38.2 (I)	12.3	8.45	5	44	50	50	1000	100
May 16	77.9 (I)	11.8	8.37	18	60	20	20	300	40
May 30	57.4 (I)	13.8	8.58	16	45	20	20	500	40
Jun 14	80.4 (I)	13.5	8.13	16	31	20	20	300	40
Jun 26	47.1 (I)	14.9	8.36	16	30	30	10 <	300	30
N=	15	15	15	15	15	15	15	15	15
Max	80.4	21.6	8.58	21	69	270	110	1000	380
Min	9.2	2.1	7.45	1 <	19	10	10 <	100	30
Mean	31.8	12.2	8.12	10	39	92	61	407	153

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 05 Mill-Willow Bypass at mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	9.6	20.5	8.16	11	38	50	70	700	120
AUG	1	9.7	21.6	8.08	21	32	100	80	600	180
SEP	1	9.2	15.9	7.90	11	43	110	110	600	220
OCT	1	14.6	15.0	7.45	7	28	60	60	500	120
NOV	1	15.9	4.1	7.76	5	30	10	90	500	100
DEC	1	18.9	6.1	8.05	6	24	190	80	300	270
JAN	1	17.1	2.1	8.00	6	19	270	110	100	380
FEB	0									
MAR	1	22.9	9.0	7.97	2	69	260	110	100	370
APR	2	29.1	11.3	8.31	3	46	95	45	150	140
MAY	3	57.8	12.6	8.47	13	50	30	30	600	60
JUN	2	63.8	14.2	8.25	16	31	25	10	300	35
N=	15	11	11	11	11	11	11	11	11	11
Max		63.8	21.6	8.47	21	69	270	110	700	380
Min		9.2	2.1	7.45	2	19	10	10	100	35
Mean		24.4	12.0	8.04	9	37	109	72	405	181
Annual Nutrient Load (tons/year)					0.22	0.86	1.97	1.19	8.36	3.16

Frequency of Exceedence

Phosphorus Criterion	17%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.7 X
Nitrogen Criterion	0.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.12
NITROGEN	0.00
CUMULATIVE SCORE	0.12

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:06 Warm Springs Creek at mouth

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	1.4 (I)	20.6	8.11	8	12	40	10 <	400	40
Aug 15	0.4 (I)	20.9	8.17	16	8	20	10 <	300	20
Sep 12	2.6 (I)	10.7	7.50	16	14	100	10 <	400	100
Oct 11	9.8 (I)	11.0	7.35	6	11	90	10 <	400	90
Nov 14	18.2 (I)	2.9	7.89	3	11	80	10 <	200	80
Dec 12	17.5 (I)	4.0	8.28	2	9	110	10 <	200	110
Jan 17	5.4 (I)	0.5	8.00	5	10	300	30	100 <	330
Mar 20	25.6 (I)	6.6	8.21	5	26	160	20	100 <	180
Apr 5	26.2 (I)	7.5	8.61	6	14	30	10 <	100 <	30
Apr 18	35.9 (I)	10.2	8.58	1 <	12	120	10 <	100 <	120
May 2	46.1 (I)	9.4	8.69	1	17	50	10 <	1000	50
May 16	43.2 (I)	10.4	8.61	2	28	60	10 <	100	60
May 30	43.9 (I)	11.5	8.51	2	17	40	10 <	400	40
Jun 14	107.8 (I)	11.7	8.19	5	19	50	10 <	200	50
Jun 26	63.6 (I)	11.3	8.17	3	13	50	10 <	100	50
N=	15	15	15	15	15	15	15	15	15
Max	107.8	20.9	8.69	16	28	300	30	1000	330
Min	0.4	0.5	7.35	1 <	8	20	10 <	100 <	20
Mean	29.8	9.9	8.19	5	13	87	10 <	247	90

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 06 Warm Springs Creek at mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	2.2	20.6	8.11	8	12	40	10 <	400	40
AUG	1	0.5	20.9	8.17	16	8	20	10 <	300	20
SEP	1	2.6	10.7	7.50	16	14	100	10 <	400	100
OCT	1	13.4	11.0	7.35	6	11	90	10 <	400	90
NOV	1	20.8	2.9	7.89	3	11	80	10 <	200	80
DEC	1	12.3	4.0	8.28	2	9	110	10 <	200	110
JAN	1	5.4	0.5	8.00	5	10	300	30	100 <	330
FEB	0									
MAR	1	25.6	6.6	8.21	5	26	160	20	100 <	180
APR	2	31.1	8.9	8.60	3	13	75	10 <	100 <	75
MAY	3	44.4	10.4	8.60	2	21	50	10 <	500	50
JUN	2	85.7	11.5	8.18	4	16	50	10 <	150	50
N=	15	11	11	11	11	11	11	11	11	11
Max		85.7	20.9	8.60	16	26	300	30	500	330
Min		0.5	0.5	7.35	2	8	20	10 <	100 <	20
Mean		22.2	9.8	8.08	6	14	98	10 <	232	102
Annual Nutrient Load (tons/year)					0.07	0.33	1.58	0.06	4.05	1.63

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.3 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:07 Clark Fork below Warm Springs Creek

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	34.2 (I)	20.8	8.89	70	112	80	20	800	100
Aug 15	15.1 (I)	18.2	8.07	57	82	100	30	600	130
Sep 12	16.9 (I)	11.5	8.15	26	54	110	60	600	170
Oct 11	48.9 (I)	12.4	7.65	14	36	40	20	400	60
Nov 14	48.5 (I)	3.0	7.99	3	21	70	10	300	80
Dec 12	53.1 (I)	3.8	8.48	7	28	260	70	300	330
Jan 17	45.5 (I)	1.7	8.41	10	63	600	150	300	750
Mar 20	122.3 (I)	4.2	7.66	27	102	460	380	600	840
Apr 5	83.7 (E)	5.6	8.30	6	89	440	120	100	560
Apr 18	156.1 (I)	8.4	8.54	1 <	88	1070	10 <	300	1070
May 2	152.2 (E)	10.0	8.54	3	77	40	10	1300	50
May 16	193.8 (I)	10.9	8.51	12	76	40	20	300	60
May 30	162.2 (I)	11.1	8.81	8	52	50	10	500	60
Jun 14	219.4 (I)	13.4	8.47	10	29	30	10 <	200	30
Jun 26	147.6 (I)	13.2	8.46	10	28	60	10 <	200	60
N=	15	15	15	15	15	15	15	15	15
Max	219.4	20.8	8.89	70	112	1070	380	1300	1070
Min	15.1	1.7	7.65	1 <	21	30	10 <	100	30
Mean	100.0	9.9	8.33	18	62	230	60	453	290

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 07 Clark Fork below Warm Springs Creek

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	34.2	20.8	8.89	70	112	80	20	800	100
AUG	1	15.1	18.2	8.07	57	82	100	30	600	130
SEP	1	16.9	11.5	8.15	26	54	110	60	600	170
OCT	1	48.9	12.4	7.65	14	36	40	20	400	60
NOV	1	48.5	3.0	7.99	3	21	70	10	300	80
DEC	1	53.1	3.8	8.48	7	28	260	70	300	330
JAN	1	45.5	1.7	8.41	10	63	600	150	300	750
FEB	0									
MAR	1	122.3	4.2	7.66	27	102	460	380	600	840
APR	2	119.9	7.0	8.42	3	89	755	60	200	815
MAY	3	169.4	10.7	8.62	8	68	43	13	700	57
JUN	2	183.5	13.3	8.47	10	29	45	10 <	200	45
N=	15	11	11	11	11	11	11	11	11	11
Max		183.5	20.8	8.89	70	112	755	380	800	840
Min		15.1	1.7	7.65	3	21	40	10 <	200	45
Mean		77.9	9.7	8.26	21	62	233	74	455	307
Annual Nutrient Load (tons/year)					1.01	4.38	17.68	5.83	30.09	23.51

Frequency of Exceedence

Phosphorus Criterion	64%
Nitrogen Criterion	5%

Magnitude of Exceedence

Phosphorus Criterion	1.2 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.79
NITROGEN	0.01
CUMULATIVE SCORE	0.80

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:08 Clark Fork near Dempsey

Instantaneous Values

Date	Streamflow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 11	10.7	(I)	20.9	8.24	18	44	10	10 <	600	10
Aug 16	3.1	(I)		8.07	15	25	70	10 <	400	70
Sep 13	8.1	(I)	7.9	7.65	17	36	80	10	500	90
Oct 12	69.7	(I)	8.2	7.61	6	24	30	10 <	400	30
Nov 15	89.1	(I)	0.1	7.88	8	48	230	10 <	500	230
Dec 12	114.8	(I)	4.3	8.24	8	33	340	10 <	500	340
Jan 17	105.2	(I)	-0.2	8.14	13	49	600	90	200	690
Mar 21	172.4	(I)	3.2	7.90	16	135	430	240	300	670
Apr 6	176.4	(I)	6.8	8.07	2	68	130	50	200	180
Apr 18	217.8	(I)	12.1	8.42	2	70	1150	10 <	300	1150
May 2	217.9	(I)	13.1	8.74	3	65	40	10 <	1300	40
May 16	235.4	(I)	12.5	8.82	10	72	40	10 <	300	40
May 30	185.5	(I)	13.4	8.88	4	45	20	10 <	500	20
Jun 14	187.3	(I)	14.9	8.76	10	39	10 <	10 <	500	10 <
Jun 26	120.9	(I)	14.9	8.79	7	31	50	10 <	200	50
N=	15		14	15	15	15	15	15	15	15
Max	235.4		20.9	8.88	18	135	1150	240	1300	1150
Min	3.1		-0.2	7.61	2	24	10 <	10 <	200	10 <
Mean	127.6		9.4	8.28	9	52	215	26	447	241

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 08 Clark Fork near Dempsey

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	10.7	20.9	8.24	18	44	10	10 <	600	10
AUG	1	3.1		8.07	15	25	70	10 <	400	70
SEP	1	8.1	7.9	7.65	17	36	80	10	500	90
OCT	1	69.7	8.2	7.61	6	24	30	10 <	400	30
NOV	1	89.1	0.1	7.88	8	48	230	10 <	500	230
DEC	1	114.8	4.3	8.24	8	33	340	10 <	500	340
JAN	1	105.2	-0.2	8.14	13	49	600	90	200	690
FEB	0									
MAR	1	172.4	3.2	7.90	16	135	430	240	300	670
APR	2	197.1	9.5	8.25	2	69	640	25	250	665
MAY	3	212.9	13.0	8.81	6	61	33	10 <	700	33
JUN	2	154.1	14.9	8.78	9	35	25	10 <	350	25
N=	15	11	10	11	11	11	11	11	11	11
Max		212.9	20.9	8.81	18	135	640	240	700	690
Min		3.1	-0.2	7.61	2	24	10	10 <	200	10
Mean		103.4	8.2	8.14	11	51	226	33	427	259
Annual Nutrient Load (tons/year)					0.78	5.86	27.74	4.65	38.57	32.39

Frequency of Exceedence	
Phosphorus Criterion	24%
Nitrogen Criterion	5%

Magnitude of Exceedence	
Phosphorus Criterion	1.0 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.25
NITROGEN	0.01
CUMULATIVE SCORE	0.26

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:09 Clark Fork at Deer Lodge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	40.0	(M)	14.9	7.78	6	20	200	10 <	400	200
Aug 16	25.0	(M)		8.15	9	12	240	10 <	500	240
Sep 13	49.0	(M)	8.8	8.10	6	22	260	10 <	400	260
Oct 12	110.0	(M)	8.7	8.45	4	32	70	10	400	80
Nov 15	139.0	(M)	0.5	7.90	5	34	340	10 <	400	340
Dec 13	206.8	(M)	2.8	7.80	7	69	400	10 <	500	400
Jan 17			0.5	8.60	11	70	600	60	200	660
Mar 21			4.1	7.77	15	133	470	180	300	650
Apr 6			7.6	8.16	5	52	400	10 <	100	400
Apr 19			8.2	8.15	2	88	940	10 <	200	940
May 2			11.8	8.50	3	69	90	10 <	1300	90
May 16			13.2	8.58	7	79	100	10 <	400	100
May 30			13.5	8.91	4	45	40	10 <	600	40
Jun 14			16.9	8.64	5	39	40	10 <	300	40
Jun 26			15.8	8.91	6	23	70	10 <	200	70
N=	6		14	15	15	15	15	15	15	15
Max	206.8		16.9	8.91	15	133	940	180	1300	940
Min	25.0		0.5	7.77	2	12	40	10 <	100	40
Mean	95.0		9.1	8.29	6	52	284	17	413	301

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 09 Clark Fork at Deer Lodge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	34.3	14.9	7.78	6	20	200	10 <	400	200
AUG	1	27.8		8.15	9	12	240	10 <	500	240
SEP	1	57.8	8.8	8.10	6	22	260	10 <	400	260
OCT	1	114.0	8.7	8.45	4	32	70	10	400	80
NOV	1	154.0	0.5	7.90	5	34	340	10 <	400	340
DEC	1	206.8	2.8	7.80	7	69	400	10 <	500	400
JAN	1	ERR	0.5	8.60	11	70	600	60	200	660
FEB	0									
MAR	1	ERR	4.1	7.77	15	133	470	180	300	650
APR	2	ERR	7.9	8.16	4	70	670	10 <	150	670
MAY	3	ERR	12.8	8.66	5	64	77	10 <	767	77
JUN	2	ERR	16.4	8.78	6	31	55	10 <	250	55
N=	15	11	10	11	11	11	11	11	11	11
Max		ERR	16.4	8.78	15	133	670	180	767	670
Min		ERR	0.5	7.77	4	12	55	10 <	150	55
Mean		ERR	7.7	8.19	7	51	307	23	388	330
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence
- Phosphorus Criterion 42%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 1.0 X
- Nitrogen Criterion 0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.43
- NITROGEN 0.00

CUMULATIVE SCORE 0.43

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:10 Clark Fork above Little Blackfoot River

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	40.0 (E)	17.4	8.00	92	116	40	10 <	800	40
Aug 16	34.1 (I)		8.23	72	90	10 <	10 <	500	10 <
Sep 13	55.2 (I)	8.3	8.20	50	80	20	10 <	600	20
Oct 12	123.4 (I)	13.1	8.92	17	55	10	10 <	400	10
Nov 15	150.5 (I)	1.1	8.11	19	56	310	10 <	400	310
Dec 13	193.0 (I)	2.9	7.80	17	116	430	20	800	450
Jan 17		-0.4	8.09	33	66	620	120	100	740
Mar 21	287.8 (I)	3.2	7.92	32	165	500	170	400	670
Apr 6	296.1 (I)	6.4	7.97	31	131	450	50	200	500
Apr 19	308.5 (I)	10.5	8.41	8	90	2540	10 <	200	2540
May 3	289.8 (I)	9.8	8.37	9	84	110	10 <	1300	110
May 17	272.6 (I)	11.1	8.33	23	93	80	10 <	400	80
May 31	215.2 (I)	9.9	8.45	21	61	10	10 <	500	10
Jun 14	243.2 (I)	17.5	8.68	36	79	10 <	10 <	300	10 <
Jun 27	160.6 (I)	15.7	8.91	22	53	10	10 <	200	10
N=	14	14	15	15	15	15	15	15	15
Max	308.5	17.5	8.92	92	165	2540	170	1300	2540
Min	34.1	-0.4	7.80	8	53	10 <	10 <	100	10 <
Mean	190.7	9.0	8.29	32	89	342	24	473	366

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 10 Clark Fork above Little Blackfoot River

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	40.0	17.4	8.00	92	116	40	10 <	800	40
AUG	1	34.1		8.23	72	90	10 <	10 <	500	10 <
SEP	1	55.2	8.3	8.20	50	80	20	10 <	600	20
OCT	1	123.4	13.1	8.92	17	55	10	10 <	400	10
NOV	1	150.5	1.1	8.11	19	56	310	10 <	400	310
DEC	1	193.0	2.9	7.80	17	116	430	20	800	450
JAN	1	ERR	-0.4	8.09	33	66	620	120	100	740
FEB	0									
MAR	1	287.8	3.2	7.92	32	165	500	170	400	670
APR	2	302.3	8.5	8.19	20	111	1495	25	200	1520
MAY	3	259.2	10.3	8.38	18	79	67	10 <	733	67
JUN	2	201.9	16.6	8.80	29	66	10 <	10 <	250	10 <
N=	15	11	10	11	11	11	11	11	11	11
Max		ERR	17.4	8.92	92	165	1495	170	800	1520
Min		ERR	-0.4	7.80	17	55	10 <	10 <	100	10 <
Mean		ERR	8.1	8.24	36	91	317	30	471	348
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	5%

Magnitude of Exceedence	
Phosphorus Criterion	1.8 X
Nitrogen Criterion	0.3 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	1.82
NITROGEN	0.02
CUMULATIVE SCORE	1.83

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:11 Clark Fork at Gold Creek Bridge

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	156.0 (M)	15.0	8.13	84	74	50	10 <	500	50
Aug 15	76.0 (M)	14.3	8.13	42	52	10 <	10 <	400	10 <
Sep 13	85.0 (M)	8.3	7.89	31	70	10 <	10 <	500	10 <
Oct 11	177.0 (M)	9.2	7.67	18	56	10 <	10 <	400	10 <
Nov 15	237.0 (M)	0.5	7.88	11	38	180	10 <	300	180
Dec 13	285.0 (M)	3.4	7.80	18	104	320	10 <	600	320
Jan 17		0.2	7.33	32	70	510	80	200	590
Mar 21		6.5	7.95	31	133	400	120	200	520
Apr 5		4.5	7.61	24	78	320	20	100 <	340
Apr 18		4.1	7.32	20	81	250	10 <	200	250
May 2		8.3	7.85	10	57	70	10 <	1100	70
May 16		8.3	7.87	16	71	70	10 <	400	70
May 30		6.8	8.10	15	50	10 <	10 <	500	10 <
Jun 14		13.9	8.18	36	63	10 <	10 <	400	10 <
Jun 27		12.8	8.11	25	43	20	10 <	200	20
N=	6	15	15	15	15	15	15	15	15
Max	285.0	15.0	8.18	84	133	510	120	1100	590
Min	76.0	0.2	7.32	10	38	10 <	10 <	100 <	10 <
Mean	169.3	7.7	7.85	28	69	146	15	393	161

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 11 Clark Fork at Gold Creek Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	133.0	15.0	8.13	84	74	50	10 <	500	50
AUG	1	72.8	14.3	8.13	42	52	10 <	10 <	400	10 <
SEP	1	99.8	8.3	7.89	31	70	10 <	10 <	500	10 <
OCT	1	198.0	9.2	7.67	18	56	10 <	10 <	400	10 <
NOV	1	244.0	0.5	7.88	11	38	180	10 <	300	180
DEC	1	263.0	3.4	7.80	18	104	320	10 <	600	320
JAN	1	ERR	0.2	7.33	32	70	510	80	200	590
FEB	0									
MAR	1	ERR	6.5	7.95	31	133	400	120	200	520
APR	2	ERR	4.3	7.47	22	80	285	10	100	295
MAY	3	ERR	7.8	7.94	14	59	47	10 <	667	47
JUN	2	ERR	13.4	8.15	31	53	10	10 <	300	10
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	15.0	8.15	84	133	510	120	667	590
Min		ERR	0.2	7.33	11	38	10 <	10 <	100	10 <
Mean		ERR	7.5	7.85	30	72	164	19	379	183
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	83%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.4 X
Nitrogen Criterion	0.2 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	1.20
NITROGEN	0.00
CUMULATIVE SCORE	1.20

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:12 Clark Fork at Bonita

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	271.0 (M)	18.0	8.16	32	42	10 <	10 <	400	10 <
Aug 15	128.0 (M)	19.7	8.21	9	18	10 <	10 <	400	10 <
Sep 13	176.0 (M)	12.0	8.08	6	40	10 <	10 <	500	10 <
Oct 11	390.0 (M)	11.8	7.86	15	51	10 <	10 <	400	10 <
Nov 15	453.0 (M)	2.7	7.99	10	30	10 <	10 <	200	10 <
Dec 13	474.0 (E)	4.3	7.87	7	67	120	10 <	400	120
Jan 17		2.4	7.84	13	45	270	10 <	200	270
Mar 22		6.8	7.89	53	180	330	120	1000	450
Apr 5		6.2	7.78	37	77	220	10 <	100 <	220
Apr 18		6.4	7.67	26	66	750	10 <	200	750
May 2		9.9	7.99	12	58	20	10 <	1100	20
May 16		10.1	8.00	20	73	20	10 <	300	20
May 30		9.0	8.24	22	48	10 <	10 <	500	10 <
Jun 13		17.3	8.34	36	67	10	10 <	300	10
Jun 27		15.8	8.29	29	47	20	10 <	200	20
N=	6	15	15	15	15	15	15	15	15
Max	474.0	19.7	8.34	53	180	750	120	1100	750
Min	128.0	2.4	7.67	6	18	10 <	10 <	100 <	10 <
Mean	315.3	10.2	8.01	22	61	117	10 <	407	125

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 12 Clark Fork at Bonita

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	239.0	18.0	8.16	32	42	10 <	10 <	400	10 <
AUG	1	111.0	19.7	8.21	9	18	10 <	10 <	400	10 <
SEP	1	184.0	12.0	8.08	6	40	10 <	10 <	500	10 <
OCT	1	390.0	11.8	7.86	15	51	10 <	10 <	400	10 <
NOV	1	453.0	2.7	7.99	10	30	10 <	10 <	200	10 <
DEC	1	474.0	4.3	7.87	7	67	120	10 <	400	120
JAN	1	ERR	2.4	7.84	13	45	270	10 <	200	270
FEB	0									
MAR	1	ERR	6.8	7.89	53	180	330	120	1000	450
APR	2	ERR	6.3	7.73	32	72	485	10 <	100	485
MAY	3	ERR	9.7	8.08	18	60	13	10 <	633	13
JUN	2	ERR	16.6	8.32	33	57	15	10 <	250	15
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	19.7	8.32	53	180	485	120	1000	485
Min		ERR	2.4	7.73	6	18	10 <	10 <	100	10 <
Mean		ERR	10.0	8.00	21	60	112	11	408	123
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence	
Phosphorus Criterion	47%
Nitrogen Criterion	0%

Magnitude of Exceedence	
Phosphorus Criterion	1.2 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	0.56
NITROGEN	0.00
CUMULATIVE SCORE	0.56

Frequency of Exceedence	
Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:13 Clark Fork at Turah

Instantaneous Values

Date	Streamflow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	659.0 (M)	16.8	8.23	9	18	20	10 <	400	20
Aug 15	284.0 (M)	20.3	8.14	7	15	10	10 <	500	10
Sep 13	239.0 (M)	11.8	8.02	3	19	10	10 <	400	10
Oct 11	515.0 (M)	12.0	7.91	8	26	20	10 <	200	20
Nov 15	633.0 (I)	3.0	8.00	8	22	20	10 <	200	20
Dec 13	701.7 (I)	4.3	7.93	5	34	60	10 <	300	60
Jan 17		3.5	7.59	7	36	150	10 <	100 <	150
Mar 22		6.0	7.84	34	104	280	60	500	340
Apr 5		5.7	7.86	24	54	170	10 <	100 <	170
Apr 18		6.6	7.74	18	48	460	10 <	100	460
May 2		9.4	7.72	8	36	20	10 <	1000	20
May 16		9.0	7.60	15	58	20	10 <	200	20
May 30		8.7	8.20	12	34	10 <	20	400	20
Jun 13		14.8	8.26	18	36	20	10 <	200	20
Jun 27		13.5	8.29	13	27	20	10 <	100	20
N=	6	15	15	15	15	15	15	15	15
Max	701.7	20.3	8.29	34	104	460	60	1000	460
Min	239.0	3.0	7.59	3	15	10 <	10 <	100 <	10
Mean	505.3	9.7	7.96	13	38	85	10 <	300	91

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 13 Clark Fork at Turah

Monthly Average Values

Month	N=	Streamflow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	597.0	16.8	8.23	9	18	20	10 <	400	20
AUG	1	273.0	20.3	8.14	7	15	10	10 <	500	10
SEP	1	357.0	11.8	8.02	3	19	10	10 <	400	10
OCT	1	515.0	12.0	7.91	8	26	20	10 <	200	20
NOV	1	633.0	3.0	8.00	8	22	20	10 <	200	20
DEC	1	701.7	4.3	7.93	5	34	60	10 <	300	60
JAN	1	ERR	3.5	7.59	7	36	150	10 <	100 <	150
FEB	0									
MAR	1	ERR	6.0	7.84	34	104	280	60	500	340
APR	2	ERR	6.2	7.80	21	51	315	10 <	100 <	315
MAY	3	ERR	9.0	7.84	12	43	13	10 <	533	20
JUN	2	ERR	14.2	8.28	16	32	20	10 <	150	20
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	20.3	8.28	34	104	315	60	533	340
Min		ERR	3.0	7.59	3	15	10	10 <	100 <	10
Mean		ERR	9.7	7.96	12	36	83	10 <	289	90
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence
- Phosphorus Criterion 17%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.7 X
- Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.12
- NITROGEN 0.00

CUMULATIVE SCORE 0.12

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:14 Blackfoot River at USGS station near mouth

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	665.0 (M)	18.0	8.19	1	6	10	430	300	440
Aug 15	383.0 (M)	20.5	8.15	4	5	10 <	10 <	400	10 <
Sep 13	395.0 (M)	11.2	8.03	1	5	10 <	10 <	200	10 <
Oct 11	369.1 (I)	10.0	7.85	1	5	10 <	10 <	100	10 <
Nov 15	564.8 (I)	2.7	7.94	1	10	10	10 <	200	10
Dec 13	583.2 (I)	3.0	7.89	1	14	20	10 <	100	20
Jan 17		0.2	7.70	1	37	40	10 <	100 <	40
Mar 22		3.1	7.80	15	53	50	10 <	300	50
Apr 5		4.3	7.95	16	46	10 <	10 <	100 <	10 <
Apr 18		4.6	7.64	6	29	90	10 <	300	90
May 2		7.8	7.81	4	25	40	10 <	900	40
May 16		8.4	7.80	5	51	40	40 <	200	40
May 30		7.8	8.22	3	21	10 <	10 <	300	10 <
Jun 13		12.8	8.16	4	23	10 <	10 <	200	10 <
Jun 27		14.2	8.29	1	9	20	10 <	100	20
N=	6	15	15	15	15	15	15	15	15
Max	665.0	20.5	8.29	16	53	90	430	900	440
Min	369.1	0.2	7.64	1	5	10 <	10 <	100 <	10 <
Mean	493.4	8.6	7.96	4	23	21	31	240	50

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 14 Blackfoot River at USGS station near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	623.0	18.0	8.19	1	6	10	430	300	440
AUG	1	365.0	20.5	8.15	4	5	10 <	10 <	400	10 <
SEP	1	363.0	11.2	8.03	1	5	10 <	10 <	200	10 <
OCT	1	369.1	10.0	7.85	1	5	10 <	10 <	100	10 <
NOV	1	564.8	2.7	7.94	1	10	10	10 <	200	10
DEC	1	583.2	3.0	7.89	1	14	20	10 <	100	20
JAN	1	ERR	0.2	7.70	1	37	40	10 <	100 <	40
FEB	0									
MAR	1	ERR	3.1	7.80	15	53	50	10 <	300	50
APR	2	ERR	4.5	7.80	11	38	45	10 <	150	45
MAY	3	ERR	8.0	7.94	4	32	27	10 <	467	27
JUN	2	ERR	13.5	8.23	3	16	10	10 <	150	10
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	20.5	8.23	15	53	50	430	467	440
Min		ERR	0.2	7.70	1	5	10 <	10 <	100 <	10 <
Mean		ERR	8.6	7.96	4	20	19	39	215	58
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	12%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.4 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.05
NITROGEN	0.00
CUMULATIVE SCORE	0.05

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:15 Clark Fork below Milltown Dam

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	1300.0 (M)	18.0	8.06	8	35	20	30	600	50
Aug 15	655.0 (M)	19.4	8.05	7	15	10 <	10 <	400	10 <
Sep 13	729.0 (M)	13.2	7.99	3	13	10 <	10 <	300	10 <
Oct 11	899.0 (M)	12.2	7.82	7	17	10	10 <	200	10
Nov 15	1220.0 (M)	3.1	7.48	5	20	10	10 <	200	10
Dec 13	1230.0 (E)	4.1	7.89	3	21	40	10 <	200	40
Jan 17		0.7	7.80	5	21	100	10 <	100 <	100
Mar 22		3.8	7.87	21	59	180	10	300	190
Apr 5		5.5	7.88	20	52	80	10 <	100 <	80
Apr 18		5.4	7.57	10	42	800	10 <	200	800
May 2		8.6	7.80	6	38	30	10 <	1100	30
May 16		8.7	7.78	10	54	40	10 <	300	40
May 30		8.3	8.20	6	29	10 <	10 <	400	10 <
Jun 13		14.0	8.16	8	32	10 <	10 <	200	10 <
Jun 27		14.2	8.23	5	21	30	10 <	200	30
N=	6	15	15	15	15	15	15	15	15
Max	1300.0	19.4	8.23	21	59	800	30	1100	800
Min	655.0	0.7	7.48	3	13	10 <	10 <	100 <	10 <
Mean	1005.5	9.3	7.91	8	31	89	10 <	307	92

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 15 Clark Fork below Milltown Dam

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	1197.0	18.0	8.06	8	35	20	30	600	50
AUG	1	627.0	19.4	8.05	7	15	10 <	10 <	400	10 <
SEP	1	694.0	13.2	7.99	3	13	10 <	10 <	300	10 <
OCT	1	899.0	12.2	7.82	7	17	10	10 <	200	10
NOV	1	1220.0	3.1	7.48	5	20	10	10 <	200	10
DEC	1	1230.0	4.1	7.89	3	21	40	10 <	200	40
JAN	1	ERR	0.7	7.80	5	21	100	10 <	100 <	100
FEB	0									
MAR	1	ERR	3.8	7.87	21	59	180	10	300	190
APR	2	ERR	5.5	7.73	15	47	440	10 <	100	440
MAY	3	ERR	8.5	7.93	7	40	23	10 <	600	23
JUN	2	ERR	14.1	8.20	7	27	15	10 <	200	15
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	19.4	8.20	21	59	440	30	600	440
Min		ERR	0.7	7.48	3	13	10 <	10 <	100 <	10 <
Mean		ERR	9.3	7.89	8	29	76	10 <	282	80
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	17%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.6 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.10
NITROGEN	0.00
CUMULATIVE SCORE	0.10

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:16 Clark Fork above Missoula WWTP

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	1300.0 (E)	18.5	8.07	7	35	20	10	600	30
Aug 16	655.0 (E)	19.3	8.06	4	15	20	10 <	400	20
Sep 13	729.0 (E)	14.5	8.09	2	17	10 <	10 <	300	10 <
Oct 11	899.0 (E)	13.0	7.95	6	17	10 <	10 <	200	10 <
Nov 15	1220.0 (E)	3.3	7.88	4	16	10 <	10 <	100	10 <
Dec 13	1230.0 (E)	3.7	8.00	2	20	20	10 <	100 <	20
Jan 17		0.4	7.96	16	27	80	40	100 <	120
Mar 22		4.0	7.87	20	57	180	30	100 <	210
Apr 5			7.91	17	48	100	10	100 <	110
Apr 18		6.2	7.28	9	54	90	10 <	200	90
May 2		8.7	7.81	5	38	30	10 <	1100	30
May 16		10.0	7.88	9	57	20	10 <	300	20
May 30		9.3	8.23	6	25	10	10 <	400	10
Jun 13		13.7	8.15	13	31	10 <	10 <	200	10 <
Jun 27		14.6	8.29	4	20	20	10 <	100	20
N=	6	14	15	15	15	15	15	15	15
Max	1300.0	19.3	8.29	20	57	180	40	1100	210
Min	655.0	0.4	7.28	2	15	10 <	10 <	100 <	10 <
Mean	1005.5	9.9	7.96	8	32	39	10 <	260	45

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 16 Clark Fork above Missoula WWTP

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	1197.0	18.5	8.07	7	35	20	10	600	30
AUG	1	627.0	19.3	8.06	4	15	20	10 <	400	20
SEP	1	694.0	14.5	8.09	2	17	10 <	10 <	300	10 <
OCT	1	899.0	13.0	7.95	6	17	10 <	10 <	200	10 <
NOV	1	1991.0	3.3	7.88	4	16	10 <	10 <	100	10 <
DEC	1	1230.0	3.7	8.00	2	20	20	10 <	100 <	20
JAN	1	ERR	0.4	7.96	16	27	80	40	100 <	120
FEB	0									
MAR	1	ERR	4.0	7.87	20	57	180	30	100 <	210
APR	2	ERR	6.2	7.60	13	51	95	10 <	100	100
MAY	3	ERR	9.3	7.97	7	40	20	10 <	600	20
JUN	2	ERR	14.2	8.22	9	26	10	10 <	150	10
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	19.3	8.22	20	57	180	40	600	210
Min		ERR	0.4	7.60	2	15	10 <	10 <	100 <	10 <
Mean		ERR	9.7	7.97	8	29	40	10 <	223	48
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	17%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.6 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.10
NITROGEN	0.00
CUMULATIVE SCORE	0.10

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:17 Missoula WWTP discharge

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	11.9 (I)	18.9	7.27	4690	4430	3780	6480	9000	10260
Aug 16	12.3 (I)	20.2	7.93	5300	4820	1180	9430	11700	10610
Sep 13	11.6 (I)	19.5	7.16	4750	4720	7460	2650	4000	10110
Oct 11	10.8 (I)	19.0	7.20	4920	5060	3670	8740	10000	12410
Nov 15	11.2 (I)	15.6	7.24	4930	5390	20	16200	18100	16220
Dec 13	11.2 (I)	14.3	7.35	4930	5330	2430	12500	15000	14930
Jan 17	12.4 (I)	13.0	7.29	4690	6150	470	18300	20700	18770
Mar 22	11.9 (I)	12.1	7.47	4090	4780	150	22700	21700	22850
Apr 5	12.4 (I)		7.52	2680	4040	120	18500	18100	18620
Apr 18	13.4 (I)	13.2	7.24	3960	4110	630	17400	18600	18030
May 2	12.8 (I)	13.7	7.84	3940	4400	20	18900	41600	18920
May 16	13.6 (I)	14.3	7.30	3430	4420	890	15000	17500	15890
May 30	15.8 (I)	14.6	7.53	4500	5000	1380	19000	19600	20380
Jun 13	13.0 (I)	16.0	7.44	3440	3390	9780	2120	3800	11900
Jun 27	12.7 (I)	17.2	7.30	3400	3250	8280	6100	6900	14380
N=	15	14	15	15	15	15	15	15	15
Max	15.8	20.2	7.93	5300	6150	9780	22700	41600	22850
Min	10.8	12.1	7.16	2680	3250	20	2120	3800	10110
Mean	12.5	15.8	7.41	4243	4619	2684	12935	15753	15619

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

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CLARK FORK BASIN MONITORING - FY 1989
Station: 17 Missoula WWTP discharge

MONTANA WATER QUALITY BUREAU

GARY INGMAN

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	9.3	18.9	7.27	4690	4430	3780	6480	9000	10260
AUG	1	9.4	20.2	7.93	5300	4820	1180	9430	11700	10610
SEP	1	9.2	19.5	7.16	4750	4720	7460	2650	4000	10110
OCT	1	8.9	19.0	7.20	4920	5060	3670	8740	10000	12410
NOV	1	8.7	15.6	7.24	4930	5390	20	16200	18100	16220
DEC	1	8.8	14.3	7.35	4930	5330	2430	12500	15000	14930
JAN	1	12.4	13.0	7.29	4690	6150	470	18300	20700	18770
FEB	0									
MAR	1	11.9	12.1	7.47	4090	4780	150	22700	21700	22850
APR	2	12.9	13.2	7.38	3320	4075	375	17950	18350	18325
MAY	3	14.1	14.2	7.56	3957	4607	763	17633	26233	18397
JUN	2	12.9	16.6	7.37	3420	3320	9030	4110	5350	13140
N=	15	11	11	11	11	11	11	11	11	11
Max		14.1	20.2	7.93	5300	6150	9030	22700	26233	22850
Min		8.7	12.1	7.16	3320	3320	20	2650	4000	10110
Mean		10.8	16.1	7.38	4454	4789	2666	12427	14558	15093
Annual Nutrient Load (tons/year)					42.70	46.47	25.27	126.75	148.91	152.02

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	100%

Magnitude of Exceedence	
Phosphorus Criterion	95.8 X
Nitrogen Criterion	15.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	95.78
NITROGEN	15.09
CUMULATIVE SCORE	110.88

Frequency of Exceedence	
Chronic Ammonia Criterion	100%
Acute Ammonia Criterion	42%

Magnitude of Exceedence	
Chronic Ammonia Criterion	7.9 X
Acute Ammonia Criterion	0.9 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	7.85
ACUTE	0.40

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:18 Clark Fork at Shuffield's

Instantaneous Values

Date	Streamflow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 12	1300.0 (E)	18.5	8.09	41	68	100	50	400	150
Aug 16	652.0 (E)	20.7	8.09	96	106	60	100	600	160
Sep 13	729.0 (E)	15.0	8.05	66	86	110	30	400	140
Oct 11	899.0 (E)	13.0	7.99	61	66	50	60	300	110
Nov 15	1220.0 (E)	3.3	7.89	40	55	10 <	80	500	80
Dec 13	1230.0 (E)	3.6	7.66	36	65	50	80	200	130
Jan 17		0.7	7.93	38	78	90	170	200	260
Mar 23		3.8	7.64	35	86	180	100	300	280
Apr 5			7.92	35	66	110	110	100 <	220
Apr 18		6.5		15	61	170	20	300	190
May 2		8.8	7.32	8	42	20	10	200	30
May 16		9.1	8.05	10	51	50	10	300	60
May 30		9.7	8.22	13	32	10	20	300	30
Jun 13		14.2	8.05	13	37	60	10 <	200	60
Jun 27		15.1	8.24	15	30	60	10 <	200	60
N=	6	14	14	15	15	15	15	15	15
Max	1300.0	20.7	8.24	96	106	180	170	600	280
Min	652.0	0.7	7.32	8	30	10 <	10 <	100 <	30
Mean	1005.0	10.1	7.94	35	62	75	56	293	131

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 18 Clark Fork at Shuffield's

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	1197.0	18.5	8.09	41	68	100	50	400	150
AUG	1	627.0	20.7	8.09	96	106	60	100	600	160
SEP	1	694.0	15.0	8.05	66	86	110	30	400	140
OCT	1	899.0	13.0	7.99	61	66	50	60	300	110
NOV	1	1220.0	3.3	7.89	40	55	10 <	80	500	80
DEC	1	1230.0	3.6	7.66	36	65	50	80	200	130
JAN	1	ERR	0.7	7.93	38	78	90	170	200	260
FEB	0									
MAR	1	ERR	3.8	7.64	35	86	180	100	300	280
APR	2	ERR	6.5	7.92	25	64	140	65	150	205
MAY	3	ERR	9.2	7.86	10	42	27	13	267	40
JUN	2	ERR	14.7	8.15	14	34	60	10 <	200	60
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	20.7	8.15	96	106	180	170	600	280
Min		ERR	0.7	7.64	10	34	10 <	10 <	150	40
Mean		ERR	9.9	7.93	42	68	79	68	320	147
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	85%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	1.4 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	1.15
NITROGEN	0.00
CUMULATIVE SCORE	1.15

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.1 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:19 Bitterroot River near mouth

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13	780.0	(E)	15.8	7.70	4	11	100	10 <	300	100
Aug 16	398.0	(E)	18.0	7.90	6	14	70	10 <	300	70
Sep 13	361.0	(E)	15.8	8.09	5	12	50	10 <	200	50
Oct 11	451.0	(E)	14.2	7.99	5	13	60	10 <	200	60
Nov 16	750.0	(E)	4.1	7.55	2	28	50	10 <	200	50
Dec 13	810.0	(E)	3.9	6.75	3	286	70	10 <	200	70
Jan 17			4.2		3	21	130	10 <	100 <	130
Mar 22			6.5	7.33	8	34	90	10 <	400	90
Apr 5				7.36	2	21	40	10 <	100 <	40
Apr 18			6.7	7.05	3	44	1090	10 <	200	1090
May 2			10.0	7.44	6	29	60	10 <	1200	60
May 16			10.7	7.57	7	39	60	10 <	100	60
May 30			10.3	7.58	4	25	50	10 <	400	50
Jun 14			12.9	7.64	8	24	40	10 <	200	40
Jun 27			15.7	7.92	5	15	50	10 <	200	50
N=	6		14	14	15	15	15	15	15	15
Max	810.0		18.0	8.09	8	286	1090	10 <	1200	1090
Min	361.0		3.9	6.75	2	11	40	10 <	100 <	40
Mean	591.7		10.6	7.56	5	41	134	10 <	273	134

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 19 Bitterroot River near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	907.0	15.8	7.70	4	11	100	10 <	300	100
AUG	1	370.0	18.0	7.90	6	14	70	10 <	300	70
SEP	1	383.0	15.8	8.09	5	12	50	10 <	200	50
OCT	1	451.0	14.2	7.99	5	13	60	10 <	200	60
NOV	1	750.0	4.1	7.55	2	28	50	10 <	200	50
DEC	1	810.0	3.9	6.75	3	286	70	10 <	200	70
JAN	1	ERR	4.2	ERR	3	21	130	10 <	100 <	130
FEB	0									
MAR	1	ERR	6.5	7.33	8	34	90	10 <	400	90
APR	2	ERR	6.7	7.21	3	33	565	10 <	100	565
MAY	3	ERR	10.3	7.53	6	31	57	10 <	567	57
JUN	2	ERR	14.3	7.78	7	20	45	10 <	200	45
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	18.0	ERR	8	286	565	10 <	567	565
Min		ERR	3.9	ERR	2	11	45	10 <	100 <	45
Mean		ERR	10.3	ERR	5	46	117	10 <	242	117
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	9%
Nitrogen Criterion	5%

Magnitude of Exceedence

Phosphorus Criterion	0.9 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.08
NITROGEN	0.01
CUMULATIVE SCORE	0.09

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:20 Clark Fork at Harper Bridge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13	2040.0	(M)	16.2	7.82	16	34	100	20	300	120
Aug 16	1050.0	(M)	20.5	8.14	13	50	50	10 <	200	50
Sep 13	1090.0	(M)	15.3	8.30	10	25	50	10 <	200	50
Oct 12	1320.0	(M)	11.1	7.64	19	34	90	20	200	110
Nov 16	1990.0	(M)	3.5	7.64	14	26	60	10	200	70
Dec 14	2200.0	(M)	3.3	7.89	12	43	90	10	100 <	100
Jan 18	1860.0	(M)	2.3	7.77	20	58	150	60	400	210
Mar 23		(M)	4.6	7.62	23	60	180	50	200	230
Apr 6		(M)		7.80	11	53	90	10	100	100
Apr 18		(M)	7.8		12	59		10	300	
May 2		(M)	9.7	7.41	10	40	40	20	100	60
May 16		(M)	10.5	8.04	10	47	50	20	200	70
May 30		(M)	11.3	8.18	9	28	30	10 <	300	30
Jun 14		(M)	14.4	7.89	8	27	30	10 <	200	30
Jun 28		(M)	14.7	8.03	7	20	50	10 <	200	50
N=	7		14	14	15	15	14	15	15	14
Max	2200.0		20.5	8.30	23	60	180	60	400	230
Min	1050.0		2.3	7.41	7	20	30	10 <	100 <	30
Mean	1650.0		10.4	7.87	13	40	76	15	207	91

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 20 Clark Fork at Harper Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	2104.0	16.2	7.82	16	34	100	20	300	120
AUG	1	997.0	20.5	8.14	13	50	50	10 <	200	50
SEP	1	1077.0	15.3	8.30	10	25	50	10 <	200	50
OCT	1	1688.0	11.1	7.64	19	34	90	20	200	110
NOV	1	1991.0	3.5	7.64	14	26	60	10	200	70
DEC	1	1726.0	3.3	7.89	12	43	90	10	100 <	100
JAN	1	1703.0	2.3	7.77	20	58	150	60	400	210
FEB	0									
MAR	1	ERR	4.6	7.62	23	60	180	50	200	230
APR	2	ERR	7.8	7.80	12	56	90	10	200	100
MAY	3	ERR	10.5	7.88	10	38	40	13	200	53
JUN	2	ERR	14.6	7.96	8	24	40	10 <	200	40
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	20.5	8.30	23	60	180	60	400	230
Min		ERR	2.3	7.62	8	24	40	10 <	100 <	40
Mean		ERR	10.0	7.86	14	41	85	18	209	103
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence

Phosphorus Criterion	27%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.8 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.22
NITROGEN	0.00
CUMULATIVE SCORE	0.22

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:21 Stone Container Corporation wastewater discharge

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)		Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13	0.0	(I)									
Aug 16	0.0	(I)									
Sep 13	0.0	(I)									
Oct 12	0.0	(I)									
Nov 16	2.8	(I)	3.9	8.06	181	368	10	<	1280	4300	1280
Dec 14	4.4	(I)	4.0	8.08	566	510	30		1240	3600	1270
Jan 18	0.0	(I)									
Mar 23	5.1	(I)	3.2	8.40	411	606	10	<	1730	3800	1730
Apr 5	18.8	(I)		8.07	356	486	10	<	1160	2600	1160
Apr 18	66.8	(I)	12.2		185	481			600	3100	
May 2	50.2	(I)	13.2	7.72	92	637	70		720	5800	790
May 16	31.3	(I)	13.3	8.33	182	622	10	<	840	2400	840
May 30	18.6	(I)	13.7	8.29	272	829	10	<	1310	6300	1310
Jun 14	13.2	(I)	21.0	8.11	97	829	10	<	1990	8100	1990
Jun 28	13.37	(I)	17.6	8.28	123	651	10	<	1820	7400	1820
N=	15		9	9	10	10	9		10	10	9
Max	66.8		21.0	8.40	566	829	70		1990	8100	1990
Min	0.0		3.2	7.72	92	368	10	<	600	2400	790
Mean	15.0		11.3	8.15	247	602	11		1269	4740	1354

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 21 Stone Container Corporation wastewater discharge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	0	1.1								
AUG	0	0.0								
SEP	0	0.0								
OCT	0	0.9								
NOV	1	1.9	3.9	8.06	181	368	10 <	1280	4300	1280
DEC	1	0.6	4.0	8.08	566	510	30	1240	3600	1270
JAN	0	0.0								
FEB	0	0.0								
MAR	1	14.6	3.2	8.40	411	606	10 <	1730	3800	1730
APR	2	55.9	12.2	8.07	271	484	10 <	880	2850	1160
MAY	3	53.6	13.4	8.11	182	696	23	957	4833	980
JUN	2	20.1	19.3	8.20	110	740	10 <	1905	7750	1905
N=	10	12	6	6	6	6	6	6	6	6
Max		55.9	19.3	8.40	566	740	30	1905	7750	1905
Min		0.0	3.2	8.06	110	368	10 <	880	2850	980
Mean		12.4	9.3	8.15	287	567	10 <	1332	4522	1388
Annual Nutrient Load (tons/year)					2.78	7.33	0.11	13.74	52.62	15.11

Frequency of Exceedence	
Phosphorus Criterion	100%
Nitrogen Criterion	89%

Magnitude of Exceedence	
Phosphorus Criterion	11.3 X
Nitrogen Criterion	1.4 X

NUTRIENT ENRICHMENT SEVERITY SCORE	
PHOSPHORUS	11.35
NITROGEN	1.23
CUMULATIVE SCORE	12.58

Frequency of Exceedence	
Chronic Ammonia Criterion	93%
Acute Ammonia Criterion	0%

Magnitude of Exceedence	
Chronic Ammonia Criterion	2.0 X
Acute Ammonia Criterion	0.3 X

AMMONIA TOXICITY SEVERITY SCORE	
CHRONIC	1.82
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:22 Clark Fork at Huson

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13	2040.0	(E)	16.8	7.91	20	38	90	10 <	200	90
Aug 16	1050.0	(E)	21.0	8.16	10	31	10 <	10 <	300	10 <
Sep 13	1090.0	(E)	15.7	8.32	10	35	10	10 <	300	10
Oct 12	1320.0	(E)	11.6	7.69	18	38	40	10 <	300	40
Nov 16	1990.0	(E)	3.7	7.66	17	32	50	10 <	200	50
Dec 14	2200.0	(E)	3.3	8.18	14	108	90	10	300	100
Jan 18	1860.0	(E)	2.5	7.81	24	51	140	50	300	190
Mar 23		(E)	5.1	7.63	29	63	180	60	200	240
Apr 6		(E)		7.78	16	54	100	10	100 <	110
Apr 18		(E)	7.8		11	62		10	300	
May 2		(E)	9.9	7.42	10	42	40	10	100	50
May 16		(E)	10.8	8.18	10	49	60	10	300	70
May 31		(E)	10.1	7.53	8	30	30	10 <	300	30
Jun 14		(E)	14.7	7.77	8	32	20	10 <	300	20
Jun 28		(E)	14.7	8.09	8	23	40	10 <	300	40
N=	7		14	14	15	15	14	15	15	14
Max	2200.0		21.0	8.32	29	108	180	60	300	240
Min	1050.0		2.5	7.42	8	23	10 <	10 <	100 <	10 <
Mean	1650.0		10.6	7.87	14	46	64	11	247	74

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 22 Clark Fork at Huson

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	2104.0	16.8	7.91	20	38	90	10 <	200	90
AUG	1	997.0	21.0	8.16	10	31	10 <	10 <	300	10 <
SEP	1	1077.0	15.7	8.32	10	35	10	10 <	300	10
OCT	1	1688.0	11.6	7.69	18	38	40	10 <	300	40
NOV	1	1991.0	3.7	7.66	17	32	50	10 <	200	50
DEC	1	1726.0	3.3	8.18	14	108	90	10	300	100
JAN	1	1703.0	2.5	7.81	24	51	140	50	300	190
FEB	0									
MAR	1	ERR	5.1	7.63	29	63	180	60	200	240
APR	2	ERR	7.8	7.78	14	58	100	10	150	110
MAY	3	ERR	10.3	7.71	9	40	43	10 <	233	50
JUN	2	ERR	14.7	7.93	8	28	30	10 <	300	30
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	21.0	8.32	29	108	180	60	300	240
Min		ERR	2.5	7.63	8	28	10 <	10 <	150	10 <
Mean		ERR	10.2	7.89	16	47	70	12	253	83
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence
- Phosphorus Criterion 36%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.9 X
- Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.35
- NITROGEN 0.00

CUMULATIVE SCORE 0.35

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:23 Clark Fork near Alberton

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho'P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13	2040.0	(E)	17.0	8.01	17	31	60	10 <	300	60
Aug 16	1050.0	(E)	21.3	8.11	14	27	10 <	10 <	200	10 <
Sep 14	1130.0	(E)	13.2	8.05	11	38	10 <	10 <	300	10 <
Oct 12	1320.0	(E)	11.6	7.81	12	31	10 <	10 <	200	10 <
Nov 16	1990.0	(E)	3.7	7.86	14	28	30	10 <	100 <	30
Dec 14	2200.0	(E)	3.2	8.25	11	46	70	10 <	400	70
Jan 18	1860.0	(E)	2.9	7.63	19	46	130	20	300	150
Mar 23		(E)	5.1	7.60	20	62	180	40	400	220
Apr 6		(E)		7.64	20	51	80	10 <	100	80
Apr 18		(E)	7.7		10	70		10 <	200	
May 2		(E)	9.8	7.51	8	41	40	20	100	60
May 16		(E)	11.1	8.05	9	47	50	10 <	300	50
May 31		(E)	10.3	7.93	8	29	30	10 <	200	30
Jun 14		(E)	14.8	7.72	8	32	20	10 <	200	20
Jun 28		(E)	14.7	8.10	8	23	40	10 <	200	40
N=	7		14	14	15	15	14	15	15	14
Max	2200.0		21.3	8.25	20	70	180	40	400	220
Min	1050.0		2.9	7.51	8	23	10 <	10 <	100 <	10 <
Mean	1655.7		10.5	7.88	13	40	52	10 <	227	58

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989
Station: 23 Clark Fork near Alberton

MONTANA WATER QUALITY BUREAU

GARY INGMAN

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	2104.0	17.0	8.01	17	31	60	10 <	300	60
AUG	1	997.0	21.3	8.11	14	27	10 <	10 <	200	10 <
SEP	1	1077.0	13.2	8.05	11	38	10 <	10 <	300	10 <
OCT	1	1688.0	11.6	7.81	12	31	10 <	10 <	200	10 <
NOV	1	1991.0	3.7	7.86	14	28	30	10 <	100 <	30
DEC	1	1726.0	3.2	8.25	11	46	70	10 <	400	70
JAN	1	1703.0	2.9	7.63	19	46	130	20	300	150
FEB	0									
MAR	1	ERR	5.1	7.60	20	62	180	40	400	220
APR	2	ERR	7.7	7.64	15	61	80	10 <	150	80
MAY	3	ERR	10.4	7.83	8	39	40	10 <	200	47
JUN	2	ERR	14.8	7.91	8	28	30	10 <	200	30
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	21.3	8.25	20	62	180	40	400	220
Min		ERR	2.9	7.60	8	27	10 <	10 <	100 <	10 <
Mean		ERR	10.1	7.88	14	40	56	10 <	241	62
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence
Phosphorus Criterion 18%
Nitrogen Criterion 0%

Magnitude of Exceedence
Phosphorus Criterion 0.8 X
Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 0.14
NITROGEN 0.00

CUMULATIVE SCORE 0.14

Frequency of Exceedence
Chronic Ammonia Criterion 0%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 0.0 X
Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 0.00
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:24 Clark Fork at Superior

Instantaneous Values

Date	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 13		17.5	8.36	7	15	60	10 <	200	60
Aug 17		15.7	8.03	7	15	80	10 <	100 <	80
Sep 14		13.0	8.00	6	25	10	10 <	200	10
Oct 12		11.7	7.86	8	26	10 <	10 <	200	10 <
Nov 16		4.3	7.96	9	22	20	10 <	300	20
Dec 14		3.3	8.43	7	24	50	10 <	100 <	50
Jan 18		2.4	7.86	9	30	110	10 <	200	110
Mar 23		6.3	7.83	21	56	170	20	100	190
Apr 6			7.89	15	47	70	10 <	100	70
Apr 18		6.9		9	79		10	300	
May 2		9.3	7.56	10	38	60	20	100	80
May 16		10.3	7.71	10	49	60	10 <	200	60
May 31		10.4	8.09	8	28	40	10 <	100	40
Jun 14		14.3	7.79	8	33	30	10 <	200	30
Jun 28		15.7	8.28	6	17	40	10 <	200	40
N=	0	14	14	15	15	14	15	15	14
Max	ERR	17.5	8.43	21	79	170	20	300	190
Min	ERR	2.4	7.56	6	15	10 <	10 <	100 <	10 <
Mean	ERR	10.1	7.98	9	34	57	10 <	160	60

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Station: 24 Clark Fork at Superior

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1		17.5	8.36	7	15	60	10 <	200	60
AUG	1		15.7	8.03	7	15	80	10 <	100 <	80
SEP	1		13.0	8.00	6	25	10	10 <	200	10
OCT	1		11.7	7.86	8	26	10 <	10 <	200	10 <
NOV	1		4.3	7.96	9	22	20	10 <	300	20
DEC	1		3.3	8.43	7	24	50	10 <	100 <	50
JAN	1		2.4	7.86	9	30	110	10 <	200	110
FEB	0									
MAR	1		6.3	7.83	21	56	170	20	100	190
APR	2		6.9	7.89	12	63	70	10 <	200	70
MAY	3		10.0	7.79	9	38	53	10 <	133	60
JUN	2		15.0	8.04	7	25	35	10 <	200	35
N=	15	0	11	11	11	11	11	11	11	11
Max		ERR	17.5	8.43	21	63	170	20	300	190
Min		ERR	2.4	7.79	6	15	10 <	10 <	100 <	10 <
Mean		ERR	9.6	8.00	9	31	60	10 <	158	62

Annual Nutrient Load (tons/year)

Frequency of Exceedence
Phosphorus Criterion 14%
Nitrogen Criterion 0%

Magnitude of Exceedence
Phosphorus Criterion 0.6 X
Nitrogen Criterion 0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE
PHOSPHORUS 0.08
NITROGEN 0.00

CUMULATIVE SCORE 0.08

Frequency of Exceedence
Chronic Ammonia Criterion 0%
Acute Ammonia Criterion 0%

Magnitude of Exceedence
Chronic Ammonia Criterion 0.0 X
Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
CHRONIC 0.00
ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:25 Clark Fork above Flathead River

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	3090.0	(M)	16.6	8.00	5	12	20	10 <	300	20
Aug 17	1570.0	(M)	20.1	8.14	5	14	10 <	10 <	300	10 <
Sep 14	1520.0	(M)	15.1	7.99	2	15	10	10 <	200	10
Oct 12	1850.0	(M)	13.0	7.88	5	19	20	10 <	200	20
Nov 16	2640.0	(M)	4.7	7.39	7	15	20	10 <	300	20
Dec 14	2800.0	(M)	3.3	8.35	4	17	30	10 <	100 <	30
Jan 18	2340.0	(M)	3.1	7.90	3	19	60	10 <	200	60
Mar 23		(M)	6.8	7.78	18	50	120	10 <	200	120
Apr 6		(M)		7.98	9	36	40	10 <	100	40
Apr 19		(M)	6.5		9	70		10 <	200	
May 3		(M)	8.7	7.55	9	38	60	10	100	70
May 17		(M)	9.8	8.05	8	43	80	10 <	200	80
May 31		(M)	10.8	8.03	6	24	310	10 <	200	310
Jun 14		(M)	15.0	8.04	9	29	30	10 <	200	30
Jun 28		(M)	15.7	8.22	5	15	50	10 <	200	50
N=	7		14	14	15	15	14	15	15	14
Max	3090.0		20.1	8.35	18	70	310	10	300	310
Min	1520.0		3.1	7.39	2	12	10 <	10 <	100 <	10 <
Mean	2258.6		10.7	7.95	7	28	61	10 <	193	61

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 25 Clark Fork above Flathead River

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	3098.0	16.6	8.00	5	12	20	10 <	300	20
AUG	1	1523.0	20.1	8.14	5	14	10 <	10 <	300	10 <
SEP	1	1521.0	15.1	7.99	2	15	10	10 <	200	10
OCT	1	2197.0	13.0	7.88	5	19	20	10 <	200	20
NOV	1	2633.0	4.7	7.39	7	15	20	10 <	300	20
DEC	1	2338.0	3.3	8.35	4	17	30	10 <	100 <	30
JAN	1	2244.0	3.1	7.90	3	19	60	10 <	200	60
FEB	0	3361.0								
MAR	1	3806.0	6.8	7.78	18	50	120	10 <	200	120
APR	2	12400.0	6.5	7.98	9	53	40	10 <	150	40
MAY	3	18660.0	9.8	7.88	8	35	150	10 <	167	153
JUN	2	16040.0	15.4	8.13	7	22	40	10 <	200	40
N=	15	12	11	11	11	11	11	11	11	11
Max		18660.0	20.1	8.35	18	53	150	10 <	300	153
Min		1521.0	3.1	7.39	2	12	10 <	10 <	100 <	10 <
Mean		5818.4	10.4	7.95	7	25	46	10 <	202	47
Annual Nutrient Load (tons/year)					41.70	172.42	395.42	0.00	1011.65	400.61

Frequency of Exceedence

Phosphorus Criterion	5%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.5 x
Nitrogen Criterion	0.0 x

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.02
NITROGEN	0.00
CUMULATIVE SCORE	0.02

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 x
Acute Ammonia Criterion	0.0 x

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:26 Flathead River near mouth

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	5560.0	(M)	18.2	7.94	1	4	10	10 <	100 <	10
Aug 17	3990.0	(E)	22.9	8.41	2	8	10 <	10 <	200	10 <
Sep 14	3920.0	(M)	18.8	8.13	1	6	10 <	10 <	200	10 <
Oct 12	8490.0	(M)	15.0	7.81	1	7	20	10 <	200	20
Nov 16	11400.0	(M)	6.4	7.53	3	10	10	10 <	100 <	10
Dec 14	9990.0	(M)	3.3	8.16	1	9	30	10 <	100 <	30
Jan 18	9420.0	(M)	2.3	7.73	1 <	15	20	10 <	200	20
Mar 23	9420.0	(M)	5.3	7.63	19	78	80	40	100	120
Apr 6	7860.0	(M)		7.47	1 <	13	10	10 <	100 <	10
Apr 19	8710.0	(M)	10.4		1 <	16		10 <	100	
May 3	11800.0	)M)	9.3	7.74	1 <	13	10	10 <	100 <	10
May 17	21700.0	(M)	11.6	8.10	1 <	14	50	10 <	100	50
May 31	12800.0	(M)	12.2	8.13	1	16	10	10 <	100	10
Jun 15		(M)	15.8	8.15	2	9	20	10 <	100 <	20
Jun 29		(M)	16.6	8.25	1 <	7	20	10 <	200	20
N=	13		14	14	15	15	14	15	15	14
Max	21700.0		22.9	8.41	19	78	80	40	200	120
Min	3920.0		2.3	7.47	1 <	4	10 <	10 <	100 <	10 <
Mean	9620.0		12.0	7.94	2	15	21	10 <	93	24

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 26 Flathead River near mouth

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	5560.0	18.2	7.94	1	4	10	10 <	100 <	10
AUG	1	3990.0	22.9	8.41	2	8	10 <	10 <	200	10 <
SEP	1	3920.0	18.8	8.13	1	6	10 <	10 <	200	10 <
OCT	1	8490.0	15.0	7.81	1	7	20	10 <	200	20
NOV	1	11400.0	6.4	7.53	3	10	10	10 <	100 <	10
DEC	1	9990.0	3.3	8.16	1	9	30	10 <	100 <	30
JAN	1	9420.0	2.3	7.73	1 <	15	20	10 <	200	20
FEB	0									
MAR	1	9420.0	5.3	7.63	19	78	80	40	100	120
APR	2	8285.0	10.4	7.47	1 <	15	10	10 <	50	10
MAY	3	15433.3	11.0	7.99	1 <	14	23	10 <	100 <	23
JUN	2	ERR	16.2	8.20	1	8	20	10 <	100	20
N=	15	11	11	11	11	11	11	11	11	11
Max		ERR	22.9	8.41	19	78	80	40	200	120
Min		ERR	2.3	7.47	1 <	4	10 <	10 <	50 <	10 <
Mean		ERR	11.8	7.91	3	16	20	10 <	95	24
Annual Nutrient Load (tons/year)					ERR	ERR	ERR	ERR	ERR	ERR

Frequency of Exceedence
- Phosphorus Criterion 9%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.3 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.03
- NITROGEN 0.00

CUMULATIVE SCORE 0.03

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values

Date	Streamflow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	8330.0 (M)	18.2	7.98	2	7	40	10 <	100 <	40
Aug 17	5370.0 (M)	21.6	8.08	2	10	10 <	10 <	200	10 <
Sep 14	5240.0 (M)	17.0	7.94	1	8	10	10 <	200	10
Oct 12	10300.0 (M)	15.2	7.84	1	8	10	10 <	100 <	10
Nov 17	13500.0 (M)	5.6	7.47	2	10	10 <	10 <	100 <	10 <
Dec 14	12700.0 (M)	3.7	8.31	1	10	10 <	10 <	100 <	10 <
Jan 18	11300.0 (M)	2.3	7.81	1 <	10	20	10 <	200	20
Mar 23	12900.0 (M)	5.8	7.76	13	59	90	20	100	110
Apr 6	11900.0 (M)		7.86	1 <	18	10 <	10 <	100 <	10 <
Apr 19	23300.0 (M)	7.9		4	50		10 <	200	
May 3	25600.0 (M)	9.2	7.72	3	26	40	10 <	100 <	40
May 17	41400.0 (M)	10.5	8.14	1	30	60	10 <	200	60
May 31	26400.0 (M)	11.7	8.22	2	19	40	10 <	100 <	40
Jun 14	(M)	15.6	8.12	3	23	20	10 <	200	20
Jun 28	(M)	17.3	8.39	1	7	20	10 <	100	20
N=	13	14	14	15	15	14	15	15	14
Max	41400.0	21.6	8.39	13	59	90	20	200	110
Min	5240.0	2.3	7.47	1 <	7	10 <	10 <	100 <	10 <
Mean	16018.5	11.5	7.97	2	20	25	10 <	93	26

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

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Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 27 Clark Fork above Thompson Falls Reservoir

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	9733.0	18.2	7.98	2	7	40	10 <	100 <	40
AUG	1	5656.0	21.6	8.08	2	10	10 <	10 <	200	10 <
SEP	1	6291.0	17.0	7.94	1	8	10	10 <	200	10
OCT	1	9958.0	15.2	7.84	1	8	10	10 <	100 <	10
NOV	1	12580.0	5.6	7.47	2	10	10 <	10 <	100 <	10 <
DEC	1	11780.0	3.7	8.31	1	10	10 <	10 <	100 <	10 <
JAN	1	8416.0	2.3	7.81	1 <	10	20	10 <	200	20
FEB	0	10170.0								
MAR	1	12580.0	5.8	7.76	13	59	90	20	100	110
APR	2	21750.0	7.9	7.86	2	34	10 <	10 <	100	10 <
MAY	3	35750.0	10.5	8.03	2	25	47	10 <	100 <	47
JUN	2	36510.0	16.5	8.26	2	15	20	10 <	150	20
N=	15	12	11	11	11	11	11	11	11	11
Max		36510.0	21.6	8.31	13	59	90	20	200	110
Min		5656.0	2.3	7.47	1 <	7	10 <	10 <	100 <	10 <
Mean		15097.8	11.3	7.94	3	18	22	10 <	86	23
Annual Nutrient Load (tons/year)					35.99	288.93	353.00	21.02	1060.58	374.02

Frequency of Exceedence

Phosphorus Criterion	9%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.4 X
Nitrogen Criterion	0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.03
NITROGEN	0.00
CUMULATIVE SCORE	0.03

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:28 Clark Fork below Thompson Falls Dam

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	8710.0	(M)	19.4	8.04	2	11	10 <	10 <	100 <	10 <
Aug 18	5560.0	(M)	21.7	8.02	3	10	10	10 <	200	10
Sep 15	5541.0	(M)	16.8	7.89	3	11	10	10 <	200	10
Oct 13	10124.0	(M)	14.6	7.78	1	7	10	10 <	100 <	10
Nov 17	13337.0	(M)	5.7	7.72	1	10	10 <	10 <	100 <	10 <
Dec 14	13058.0	(M)	3.3	8.25	1	10	10 <	10 <	100 <	10 <
Jan 18	11382.0	(M)	0.6	7.86	1 <	9	20	10 <	100 <	20
Mar 23	13281.0	(M)	4.8	7.75	8	37	90	10	100	100
Apr 6	12208.0	(M)		7.85	1	16	10 <	10 <	100 <	10 <
Apr 19	27946.0	(M)	8.1		4	46		10 <	200	
May 3	27726.0	(M)	9.0	7.74	3	42	30	10 <	200	30
May 17	47931.0	(M)	10.5	8.16	1	37	40	10 <	200	40
May 31		(M)	11.2	8.22	2	19	20	10 <	100	20
Jun 15		(M)	15.4	8.09	3	25	30	10 <	100	30
Jun 28		(M)	16.6	8.28	1 <	8	20	10 <	200	20
N=	12		14	14	15	15	14	15	15	14
Max	47931.0		21.7	8.28	8	46	90	10	200	100
Min	5541.0		0.6	7.72	1 <	7	10 <	10 <	100 <	10 <
Mean	16400.3		11.3	7.98	2	20	20	10 <	100	21

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

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CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 28 Clark Fork below Thompson Falls Dam

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	10264.0	19.4	8.04	2	11	10 <	10 <	100 <	10 <
AUG	1	6013.0	21.7	8.02	3	10	10	10 <	200	10
SEP	1	6545.0	16.8	7.89	3	11	10	10 <	200	10
OCT	1	10334.0	14.6	7.78	1	7	10	10 <	100 <	10
NOV	1	12618.0	5.7	7.72	1	10	10 <	10 <	100 <	10 <
DEC	1	12019.0	3.3	8.25	1	10	10 <	10 <	100 <	10 <
JAN	1	8999.0	0.6	7.86	1 <	9	20	10 <	100 <	20
FEB	0	9724.0								
MAR	1	13252.0	4.8	7.75	8	37	90	10	100	100
APR	2	20077.0	8.1	7.85	3	31	10 <	10 <	100	10 <
MAY	3	37828.5	10.2	8.04	2	33	30	10 <	167	30
JUN	2	37185.0	16.0	8.19	2	17	25	10 <	150	25
N=	15	12	11	11	11	11	11	11	11	11
Max		37828.5	21.7	8.25	8	37	90	10	200	100
Min		6013.0	0.6	7.72	1 <	7	10 <	10 <	100 <	10 <
Mean		15404.9	11.0	7.94	2	17	18	10 <	83	19
Annual Nutrient Load (tons/year)					31.44	297.46	303.60	11.07	1457.03	314.67

Frequency of Exceedence
- Phosphorus Criterion 0%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.3 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.00
- NITROGEN 0.00

CUMULATIVE SCORE 0.00

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:29 Clark Fork at Noxon Bridge

Instantaneous Values

Date	Streamflow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	10300.0	(M)	19.7	7.83	5	9	20	10	100	30
Aug 18	5090.0	(M)	21.0	7.78	7	16	50	10 <	200	50
Sep 15	4100.0	(M)	20.1	7.75	4	14	50	10 <	200	50
Oct 12	10700.0	(M)	15.9	7.73	2	8	20	10 <	200	20
Nov 17	15500.0	(M)	9.2	7.69	2	12	10 <	10 <	200	10 <
Dec 15	19200.0	(M)	3.2	8.23	1	10	20	10 <	100 <	20
Jan 19	9620.0	(M)	1.7	7.12	1 <	8	20	10 <	200	20
Mar 23	9530.0	(M)	2.6	7.70	14	45	110	70	300	180
Apr 6	4990.0	(M)		7.73	6	24	90	30	100 <	120
Apr 19	26700.0	(M)	7.3		6	29		10	100	
May 3	29900.0	(M)	8.7	7.58	5	24	60	10	100 <	70
May 17	42300.0	(M)	9.7	8.10	1	23	40	10 <	200	40
May 31	26100.0	(M)	11.3	8.14	2	13	30	10 <	100	30
Jun 15	50700.0	(M)	15.3	8.02	3	14	20	10 <	100	20
Jun 28	24000.0	(M)	15.2	8.14	2	10	30	10 <	200	30
N=	15		14	14	15	15	14	15	15	14
Max	50700.0		21.0	8.23	14	45	110	70	300	180
Min	4100.0		1.7	7.12	1 <	8	10 <	10 <	100 <	10 <
Mean	19248.7		11.5	7.82	4	17	40	10 <	140	49

NOTE:Estimated streamflows are denoted with an (E) following the value.

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Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 29 Clark Fork at Noxon Bridge

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	9671.0	19.7	7.83	5	9	20	10	100	30
AUG	1	5350.0	21.0	7.78	7	16	50	10 <	200	50
SEP	1	5908.0	20.1	7.75	4	14	50	10 <	200	50
OCT	1	9477.0	15.9	7.73	2	8	20	10 <	200	20
NOV	1	12120.0	9.2	7.69	2	12	10 <	10 <	200	10 <
DEC	1	11360.0	3.2	8.23	1	10	20	10 <	100 <	20
JAN	1	8166.0	1.7	7.12	1 <	8	20	10 <	200	20
FEB	0	10500.0								
MAR	1	12280.0	2.6	7.70	14	45	110	70	300	180
APR	2	24160.0	7.3	7.73	6	27	90	20	50	120
MAY	3	38230.0	9.9	7.94	3	20	43	10 <	100	47
JUN	2	36730.0	15.3	8.08	3	12	25	10 <	150	25
N=	15	12	11	11	11	11	11	11	11	11
Max		38230.0	21.0	8.23	14	45	110	70	300	180
Min		5350.0	1.7	7.12	1 <	8	10 <	10 <	50 <	10 <
Mean		15329.3	11.4	7.78	4	16	41	10 <	155	51
Annual Nutrient Load (tons/year)					55.60	251.60	612.15	118.96	1926.78	761.29

Frequency of Exceedence

Phosphorus Criterion	0%
Nitrogen Criterion	0%

Magnitude of Exceedence

Phosphorus Criterion	0.3 X
Nitrogen Criterion	0.1 X

NUTRIENT ENRICHMENT SEVERITY SCORE

PHOSPHORUS	0.00
NITROGEN	0.00
CUMULATIVE SCORE	0.00

Frequency of Exceedence

Chronic Ammonia Criterion	0%
Acute Ammonia Criterion	0%

Magnitude of Exceedence

Chronic Ammonia Criterion	0.0 X
Acute Ammonia Criterion	0.0 X

AMMONIA TOXICITY SEVERITY SCORE

CHRONIC	0.00
ACUTE	0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station:30 Clark Fork below Cabinet Gorge Dam

Instantaneous Values

Date	Stream-flow (cfs)		Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
Jul 14	14400.0	(M)	19.8	7.92	2	8	10 <	10 <	100 <	10 <
Aug 18	6650.0	(M)	20.5	7.89	5	7	30	10 <	200	30
Sep 15	5900.0	(M)	18.9	7.88	2	13	20	10 <	200	20
Oct 12	13400.0	(M)	15.4	7.67	1	8	20	10 <	200	20
Nov 17	17700.0	(M)	9.3	7.70	2	12	10	10 <	100 <	10
Dec 15	22500.0	(M)	4.2	8.16	1	12	30	10 <	100 <	30
Jan 19	11000.0	(M)	1.7	7.44	1 <	9	20	10 <	200	20
Mar 23	10700.0	(M)	2.3	7.73	4	23	90	20	400	110
Apr 6	6980.0	(M)		7.71	5	31	120	30	100 <	150
Apr 19	30100.0	(M)	7.3		4	26		10 <	100	
May 3	35900.0	(M)	8.8	7.56	5	24	60	10	100 <	70
May 17	47100.0	(M)	9.9	8.06	1	26	40	10 <	100	40
May 31	33000.0	(M)	10.8	8.09	3	14	40	10 <	100 <	40
Jun 15	56400.0	(M)	15.0	7.97	3	13	20	10 <	100	20
Jun 28	27200.0	(M)	15.1	8.10	3	11	40	10 <	200	40
N=	15		14	14	15	15	14	15	15	14
Max	56400.0		20.5	8.16	5	31	120	30	400	150
Min	5900.0		1.7	7.44	1 <	7	10 <	10 <	100 <	10 <
Mean	22595.3		11.4	7.85	3	16	39	10 <	113	43

NOTE:Estimated streamflows are denoted with an (E) following the value.

NOTE:Estimated streamflows are denoted with an (E) following the value.

Instantaneous streamflows (gaged) are denoted with an (I) following the value.

Mean daily streamflows (USGS) are denoted with an (M) following the value.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Station: 30 Clark Fork below Cabinet Gorge Dam

Monthly Average Values

Month	N=	Stream-flow (cfs)	Water Temp. (deg.C)	pH	Diss.Ortho P (SRP) Conc. (ug/l as P)	Total P Conc. (ug/l as P)	Diss.NO3+NO2 Conc. (ug/l as N)	Diss.NH3+NH4 Conc. (ug/l as N)	Total KJL-N Conc. (ug/l as N)	TSIN Conc. (ug/l as N)
JUL	1	11710.0	19.8	7.92	2	8	10 <	10 <	100 <	10 <
AUG	1	6765.0	20.5	7.89	5	7	30	10 <	200	30
SEP	1	7147.0	18.9	7.88	2	13	20	10 <	200	20
OCT	1	11400.0	15.4	7.67	1	8	20	10 <	200	20
NOV	1	14200.0	9.3	7.70	2	12	10	10 <	100 <	10
DEC	1	13200.0	4.2	8.16	1	12	30	10 <	100 <	30
JAN	1	9740.0	1.7	7.44	1 <	9	20	10 <	200	20
FEB	0	12300.0								
MAR	1	14500.0	2.3	7.73	4	23	90	20	400	110
APR	2	28700.0	7.3	7.71	5	29	120	15	100 <	150
MAY	3	43500.0	9.8	7.90	3	21	47	10 <	100 <	50
JUN	2	41700.0	15.1	8.04	3	12	30	10 <	150	30
N=	15	12	11	11	11	11	11	11	11	11
Max		43500.0	20.5	8.16	5	29	120	20	400	150
Min		6765.0	1.7	7.44	1 <	7	10 <	10 <	100 <	10 <
Mean		17905.2	11.3	7.82	3	14	38	10 <	123	43
Annual Nutrient Load (tons/year)					46.59	273.23	766.61	59.03	1572.11	872.57

Frequency of Exceedence
- Phosphorus Criterion 0%
- Nitrogen Criterion 0%

Magnitude of Exceedence
- Phosphorus Criterion 0.3 X
- Nitrogen Criterion 0.0 X

NUTRIENT ENRICHMENT SEVERITY SCORE
- PHOSPHORUS 0.00
- NITROGEN 0.00

CUMULATIVE SCORE 0.00

Frequency of Exceedence
- Chronic Ammonia Criterion 0%
- Acute Ammonia Criterion 0%

Magnitude of Exceedence
- Chronic Ammonia Criterion 0.0 X
- Acute Ammonia Criterion 0.0 X

AMMONIA TOXICITY SEVERITY SCORE
- CHRONIC 0.00
- ACUTE 0.00

NOTE:Monthly average streamflows are USGS monthly means where available.

Nutrient values less than the analytical detection limit are denoted with a less than sign (<) following the result and are considered to be zero in the data computations.

A P P E N D I X E

FY 1988

CLARK FORK BASIN

SUSPENDED SEDIMENT MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 00 Silver Bow Creek above Butte WWTP

Instantaneous Values					Monthly Average Values			
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	11.3	(I)	3.5	1.3	JUL	2	13.0	4.3	1.4
Jul 27	14.6	(I)	5.0	1.5					
Aug 11	11.4	(I)	6.2	1.9	AUG	1	11.4	6.2	1.9
Sep 14	10.9	(I)	8.3	1.9	SEP	1	10.9	8.3	1.9
Oct 13	9.5	(I)	8.7	2.1	OCT	1	9.5	8.7	2.1
Nov 16	9.0	(I)	9.5	2.3	NOV	1	9.0	9.5	2.3
Dec 15	5.6	(I)	11.2	2.7	DEC	1	5.6	11.2	2.7
Jan 12	7.6	(I)	8.2	1.9	JAN	1	7.6	8.2	1.9
Feb 9	9.6	(I)	10.4	2.2	FEB	1	9.6	10.4	2.2
Mar 8	10.2	(I)	11.7	2.7	MAR	2	11.3	13.4	3.2
Mar 29	12.3	(I)	15.1	3.6					
Apr 12	21.8	(I)	17.7	3.6	APR	2	25.0	32.6	5.7
Apr 20	28.2	(I)	47.5	7.8					
May 2	17.1	(I)	12.1	2.8	MAY	2	16.3	9.5	2.4
May 17	15.4	(I)	6.8	1.9					
May 31	18.8	(I)	10.1	2.5	JUN	2	14.5	8.0	2.3
Jun 14	10.2	(I)	5.9	2.1					
N=	17		17	17		17	12	12	12
Max	28.2		47.5	7.8			25.0	32.6	5.7
Min	5.6		3.5	1.3			5.6	4.3	1.4
Mean	13.1		11.6	2.6			12.0	10.9	2.5
Annual Load(tons/yr)			150.31	32.77					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.4
Moderate Level of Protection	8%	Moderate Level of Protection	1.3
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.43

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 00.5 Butte Metro WWTP discharge

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
				JUL	0	7.6		
				AUG	0	7.6		
Sep 14	9.9 (I)	4.6	4.9	SEP	1	7.0	4.6	4.9
Oct 13	8.9 (I)	5.9	5.5	OCT	1	6.6	5.9	5.5
Nov 16	8.0 (I)	5.7	5.4	NOV	1	6.6	5.7	5.4
Dec 15	8.9 (I)	5.6	5.1	DEC	1	7.6	5.6	5.1
Jan 12	9.1 (I)	8.4	7.7	JAN	1	8.0	8.4	7.7
Feb 9	9.0 (I)	4.6	4.3	FEB	1	8.1	4.6	4.3
Mar 8	13.2 (I)	11.7	11.1	MAR	2	8.0	8.9	8.5
Mar 29	7.4 (I)	6.0	5.8					
Apr 12	9.1 (I)	4.8	4.6	APR	2	8.1	4.8	4.4
Apr 20	9.3 (I)	4.7	4.2					
May 2	9.2 (I)	3.7	3.5	MAY	2	8.0	3.6	3.5
May 17	7.6 (I)	3.4	3.4					
May 31	8.7 (I)	6.8	6.2	JUN	2	8.3	7.7	6.9
Jun 14	6.7 (I)	8.5	7.5					
N=	14	14	14		14	12	10	10
Max	13.2	11.7	11.1			8.3	8.9	8.5
Min	6.7	3.4	3.4			6.6	3.6	3.5
Mean	8.9	6.0	5.7			7.6	6.0	5.6
Annual Load(tons/yr)		37.42	35.14					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.24

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 01 Silver Bow Creek below Colorado Tailings

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	19.0	(M)	6.3	3.1	JUL	2	34.1	7.9	3.2
Jul 27	26.0	(M)	9.5	3.2					
Aug 11	25.0	(M)	5.6	2.4	AUG	1	27.7	5.6	2.4
Sep 14	21.0	(M)	5.7	3.7	SEP	1	22.2	5.7	3.7
Oct 13	23.0	(M)	7.2	2.9	OCT	1	21.8	7.2	2.9
Nov 16	20.0	(M)	13.2	5.1	NOV	1	20.2	13.2	5.1
Dec 15	17.0	(M)	22.8	7.6	DEC	1	17.9	22.8	7.6
Jan 12	17.0	(M)	42.4	15.1	JAN	1	17.2	42.4	15.1
Feb 9	17.0	(M)	13.6	5.4	FEB	1	18.6	13.6	5.4
Mar 8	20.0	(M)	29.4	9.5	MAR	2	22.1	23.6	7.7
Mar 29	23.0	(M)	17.8	5.8					
Apr 12	36.0	(M)	18.8	5.3	APR	2	33.9	24.1	6.0
Apr 20	50.0	(M)	29.4	6.6					
May 2	24.0	(M)	9.4	2.9	MAY	2	27.4	7.0	2.4
May 17	24.0	(M)	4.5	1.9					
May 31	36.0	(M)	7.8	3.0	JUN	2	20.7	6.4	2.7
Jun 14	18.0	(M)	4.9	2.3					
N=	17		17	17		17	12	12	12
Max	50.0		42.4	15.1			34.1	42.4	15.1
Min	17.0		4.5	1.9			17.2	5.6	2.4
Mean	24.5		14.6	5.0			23.7	15.0	5.3
Annual Load(tons/yr)			330.64	115.78					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.5
Moderate Level of Protection	8%	Moderate Level of Protection	1.7
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.60

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: Q2 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	17.8 (I)	9.1	2.9	JUL	2	20.8	9.5	2.8
Jul 27	23.7 (I)	9.9	2.6					
Aug 11	19.2 (I)	6.0	2.3	AUG	1	19.2	6.0	2.3
Sep 14	17.2 (I)	6.9	2.9	SEP	1	17.2	6.9	2.9
Oct 13	21.0 (I)	12.5	3.4	OCT	1	21.0	12.5	3.4
Nov 16	19.4 (I)	7.4	2.2	NOV	1	19.4	7.4	2.2
Dec 15	16.0 (E)	37.9	5.4	DEC	1	16.0	37.9	5.4
Jan 12	15.0 (E)	18.2	3.8	JAN	1	15.0	18.2	3.8
Feb 9	14.6 (I)	9.0	2.6	FEB	1	14.6	9.0	2.6
Mar 8	20.3 (I)	10.5	3.0	MAR	2	20.7	10.7	3.2
Mar 29	21.1 (I)	10.8	3.3					
Apr 12	25.5 (I)	17.5	5.0	APR	2	27.6	31.5	6.7
Apr 20	29.7 (I)	45.4	8.3					
May 2	22.1 (I)	9.4	2.8	MAY	2	25.7	9.2	2.9
May 17	29.2 (I)	9.0	3.0					
May 31	23.8 (I)	32.1	7.7	JUN	2	22.1	19.8	5.5
Jun 14	20.3 (I)	7.5	3.2					
N=	17	17	17		17	12	12	12
Max	29.7	45.4	8.3			27.6	37.9	6.7
Min	14.6	6.0	2.2			14.6	6.0	2.2
Mean	20.9	15.2	3.8			19.9	14.9	3.6
Annual Load(tons/yr)		296.22	72.97					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	83%	High Level of Protection	0.4
Moderate Level of Protection	17%	Moderate Level of Protection	1.4
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.60

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	32.2	(I)	9.3	3.2	JUL	2	44.7	11.3	3.8
Jul 27	57.2	(I)	13.3	4.3					
Aug 11	51.5	(I)	19.8	7.4	AUG	1	51.5	19.8	7.4
Sep 14	35.5	(I)	10.1	4.5	SEP	1	35.5	10.1	4.5
Oct 13	39.2	(I)	17.9	5.8	OCT	1	39.2	17.9	5.8
Nov 16	44.4	(I)	11.3	3.9	NOV	1	44.4	11.3	3.9
Dec 15	38.0	(E)	15.0	2.9	DEC	1	38.0	15.0	2.9
Jan 18	32.0	(E)	14.7	3.3	JAN	1	32.0	14.7	3.3
Feb 9	38.4	(I)	11.8	2.9	FEB	1	38.4	11.8	2.9
Mar 8	40.9	(I)	16.3	4.1	MAR	2	43.9	15.3	4.2
Mar 29	46.8	(I)	14.2	4.2					
Apr 12	54.4	(I)	28.7	8.2	APR	2	66.4	35.5	8.2
Apr 20	78.3	(I)	42.3	8.1					
May 2	56.8	(I)	9.1	2.6	MAY	2	69.2	11.4	3.3
May 17	81.5	(I)	13.6	3.9					
May 31	85.9	(I)	60.6	13.5	JUN	2	64.6	35.9	9.0
Jun 14	43.2	(I)	11.1	4.5					
N=	17		17	17		17	12	12	12
Max	85.9		60.6	13.5			69.2	35.9	9.0
Min	32.0		9.1	2.6			32.0	10.1	2.9
Mean	50.4		18.8	5.1			47.3	17.5	4.9
Annual Load(tons/yr)			875.65	242.85					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	83%	High Level of Protection	0.6
Moderate Level of Protection	17%	Moderate Level of Protection	1.4
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.70

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	29.7 (I)	2.5	1.5	JUL	2	28.5	2.0	1.4
Jul 27	27.3 (I)	1.4	1.2					
Aug 11	23.3 (I)	1.9	1.1	AUG	1	23.3	1.9	1.1
Sep 14	28.7 (I)	1.7	1.5	SEP	1	28.7	1.7	1.5
Oct 13	25.6 (I)	1.5	0.9	OCT	1	25.6	1.5	0.9
Nov 16	40.4 (I)	4.9	2.3	NOV	1	40.4	4.9	2.3
Dec 15	33.0 (I)	3.3	1.2	DEC	1	33.0	3.3	1.2
Jan 12	26.2 (I)	2.7	1.0	JAN	1	26.2	2.7	1.0
Feb 9	31.5 (I)	4.2	2.2	FEB	1	31.5	4.2	2.2
Mar 8	36.0 (I)	10.3	6.9	MAR	2	37.9	13.6	8.3
Mar 29	39.7 (I)	16.8	9.6					
Apr 12	48.6 (I)	18.3	12.6	APR	2	73.2	15.0	10.3
Apr 20	97.8 (I)	11.6	7.9					
May 2	57.0 (I)	12.8	7.7	MAY	2	63.4	8.7	5.4
May 17	69.8 (I)	4.6	3.0					
May 31	104.1 (I)	2.1	1.3	JUN	2	63.9	2.7	1.4
Jun 14	23.7 (I)	3.3	1.4					
N=	17	17	17		17	12	12	12
Max	104.1	18.3	12.6			73.2	15.0	10.3
Min	23.3	1.4	0.9			23.3	1.5	0.9
Mean	43.7	6.1	3.7			39.6	5.2	3.1
Annual Load(tons/yr)		247.85	151.06					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.21

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 05 Mill-Willow Bypass at mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	19.7	(I)	3.1	1.2	JUL	2	24.7	3.7	1.5
Jul 27	29.7	(I)	4.3	1.8					
Aug 11	16.1	(I)	3.6	1.5	AUG	1	16.1	3.6	1.5
Sep 14	13.5	(I)	5.2	2.1	SEP	1	13.5	5.2	2.1
Oct 13	17.2	(I)	4.6	1.7	OCT	1	17.2	4.6	1.7
Nov 16	20.5	(I)	4.9	1.7	NOV	1	20.5	4.9	1.7
Dec 15	15.1	(I)	4.1	1.2	DEC	1	15.1	4.1	1.2
Jan 12	18.9	(I)	8.3	2.2	JAN	1	18.9	8.3	2.2
Feb 9	22.6	(I)	4.4	1.7	FEB	1	22.6	4.4	1.7
Mar 8	22.8	(I)	6.1	2.9	MAR	2	22.7	5.8	3.0
Mar 29	22.5	(I)	5.4	3.1					
Apr 12	28.7	(I)	8.5	3.6	APR	2	37.5	12.4	4.2
Apr 20	46.2	(I)	16.2	4.7					
May 2	41.8	(I)	6.9	1.9	MAY	2	63.8	25.4	6.0
May 17	85.7	(I)	43.8	10.1					
May 31	78.3	(I)	7.4	2.2	JUN	2	61.1	5.4	1.7
Jun 14	43.9	(I)	3.4	1.1					
N=	17		17	17		17	12	12	12
Max	85.7		43.8	10.1			63.8	25.4	6.0
Min	13.5		3.1	1.1			13.5	3.6	1.2
Mean	32.0		8.2	2.6			27.8	7.3	2.4
Annual Load(tons/yr)			268.63	78.90					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.2
Moderate Level of Protection	8%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.29

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 06 Warm Springs Creek at mouth

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	0.2 (I)	0.7	0.6	JUL	2	6.8	0.8	0.7
Jul 27	0.1 (I)	0.9	0.8					
Aug 11	0.3 (I)	0.6	0.5	AUG	1	3.0	0.6	0.5
Sep 14	0.1 (I)	0.9	0.9	SEP	1	3.5	0.9	0.9
Oct 13	0.2 (I)	0.4	0.3	OCT	1	10.6	0.4	0.3
Nov 16	3.7 (I)	0.8	0.7	NOV	1	15.5	0.8	0.7
Dec 15	7.4 (I)	1.8	0.8	DEC	1	14.7	1.8	0.8
Jan 12	8.0 (E)	0.9	0.6	JAN	1	8.4	0.9	0.6
Feb 9	26.9 (I)	16.5	3.0	FEB	1	15.3	16.5	3.0
Mar 8	4.6 (I)	0.8	0.6	MAR	2	21.4	1.2	0.6
Mar 29	21.7 (I)	1.5	0.6					
Apr 12	29.3 (I)	2.8	1.0	APR	2	34.1	5.8	1.8
Apr 20	44.9 (I)	8.8	2.5					
May 2	36.0 (I)	3.2	1.1	MAY	2	70.0	70.0	15.3
May 17	113.0 (M)	136.7	29.4					
May 31	91.2 (E)	6.8	2.0	JUN	2	58.5	5.3	1.6
Jun 14	59.4 (I)	3.7	1.2					
N=	17	17	17		17	12	12	12
Max	113.0	136.7	29.4			70.0	70.0	15.3
Min	0.1	0.4	0.3			3.0	0.4	0.3
Mean	26.3	11.0	2.7			21.8	8.7	2.2
Annual Load(tons/yr)		476.06	109.43					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.1
Moderate Level of Protection	8%	Moderate Level of Protection	2.8
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.35

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 07 Clark Fork below Warm Springs Creek

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	53.7	(I)	2.7	1.3	JUL	2	57.8	2.8	1.4
Jul 27	61.8	(I)	2.8	1.5					
Aug 11	39.7	(I)	2.4	1.3	AUG	1	39.7	2.4	1.3
Sep 14	42.3	(I)	3.2	1.6	SEP	1	42.3	3.2	1.6
Oct 13	45.8	(I)	2.5	1.0	OCT	1	45.8	2.5	1.0
Nov 16	64.6	(E)	3.7	1.7	NOV	1	64.6	3.7	1.7
Dec 15	55.5	(I)	3.6	1.8	DEC	1	55.5	3.6	1.8
Jan 12	53.0	(E)	5.0	1.6	JAN	1	53.0	5.0	1.6
Feb 9	81.0	(I)	5.4	1.9	FEB	1	81.0	5.4	1.9
Mar 8	75.4	(I)	7.6	4.2	MAR	2	80.5	8.8	4.7
Mar 29	85.5	(I)	9.9	5.1					
Apr 12	105.8	(I)	11.8	6.8	APR	2	146.1	13.0	6.3
Apr 20	186.4	(I)	14.2	5.8					
May 2	139.2	(I)	7.4	3.6	MAY	2	203.6	31.2	9.0
May 17	268.0	(E)	54.9	14.4					
May 31	273.6	(I)	7.0	2.0	JUN	2	200.5	5.4	1.8
Jun 14	127.4	(I)	3.7	1.5					
N=	17		17	17		17	12	12	12
Max	273.6		54.9	14.4			203.6	31.2	9.0
Min	39.7		2.4	1.0			39.7	2.4	1.0
Mean	103.5		8.7	3.4			89.2	7.2	2.8
Annual Load(tons/yr)			961.85	343.41					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.2
Moderate Level of Protection	8%	Moderate Level of Protection	1.2
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.29

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 08 Clark Fork near Dempsey

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	24.7 (I)	4.1	1.4	JUL	2	43.9	4.1	1.6
Jul 27	63.1 (I)	4.0	1.7					
Aug 11	29.0 (I)	3.3	1.3	AUG	1	29.0	3.3	1.3
Sep 14	42.9 (I)	5.5	2.1	SEP	1	42.9	5.5	2.1
Oct 13	83.5 (I)	3.3	0.7	OCT	1	83.5	3.3	0.7
Nov 16	121.4 (I)	4.0	1.4	NOV	1	121.4	4.0	1.4
Dec 15	133.1 (I)	9.4	2.9	DEC	1	133.1	9.4	2.9
Jan 12		27.1	5.0	JAN	1		27.1	5.0
Feb 9		12.9	3.1	FEB	1		12.9	3.1
Mar 8	131.4 (I)	10.2	3.2	MAR	2	139.8	13.4	4.2
Mar 29	148.1 (I)	16.6	5.2					
Apr 12	166.8 (I)	17.3	6.4	APR	2	166.8	25.0	7.1
Apr 20		32.7	7.7					
May 2	186.5 (I)	15.1	4.4	MAY	2	186.5	33.2	7.1
May 17		51.3	9.8					
May 31		14.7	3.0	JUN	2	102.7	8.8	2.1
Jun 14	102.7 (I)	2.8	1.2					
N=	12	17	17		17	10	12	12
Max	186.5	51.3	9.8			186.5	33.2	7.1
Min	24.7	2.8	0.7			29.0	3.3	0.7
Mean	102.8	13.8	3.6			105.0	12.5	3.2
Annual Load(tons/yr)		1292.28	339.16					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	75%	High Level of Protection	0.3
Moderate Level of Protection	25%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.50

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 09 Clark Fork at Deer Lodge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	78.0	(M)	3.5	1.2	JUL	2	148.0	5.8	1.8
Jul 27	147.0	(M)	8.0	2.4					
Aug 11	62.0	(M)	3.2	1.3	AUG	1	88.5	3.2	1.3
Sep 14	73.0	(M)	6.5	2.0	SEP	1	96.3	6.5	2.0
Oct 13	150.0	(M)	7.2	1.6	OCT	1	156.0	7.2	1.6
Nov 16	179.0	(M)	11.9	3.4	NOV	1	176.0	11.9	3.4
Dec 15	150.0	(E)	8.8	2.1	DEC	1	174.0	8.8	2.1
Jan 12	150.0	(E)	25.5	4.5	JAN	1	150.0	25.5	4.5
Feb 9	190.0	(E)	48.9	6.2	FEB	1	184.0	48.9	6.2
Mar 8	193.0	(M)	31.2	6.2	MAR	2	204.0	24.8	4.5
Mar 29	202.0	(M)	18.3	2.7					
Apr 12	214.0	(M)	27.8	7.6	APR	2	262.0	40.2	8.5
Apr 20	351.0	(M)	52.5	9.4					
May 2	287.0	(M)	17.2	4.3	MAY	2	273.0	26.2	5.1
May 17	299.0	(M)	35.1	5.9					
May 31	354.0	(M)	26.8	5.5	JUN	2	161.0	16.2	3.4
Jun 14	189.0	(M)	5.6	1.3					
N=	17		17	17		17	12	12	12
Max	354.0		52.5	9.4			273.0	48.9	8.5
Min	62.0		3.2	1.2			88.5	3.2	1.3
Mean	192.2		19.9	4.0			172.7	18.8	3.7
Annual Load(tons/yr)			3614.58	706.15					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	67%	High Level of Protection	0.4
Moderate Level of Protection	33%	Moderate Level of Protection	1.4
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.75

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 10 Clark Fork above LIttle Blackfoot River

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	82.9	(I)	6.7	1.9	JUL	2	115.7	7.7	2.1
Jul 27	148.4	(I)	8.6	2.3					
Aug 11	80.0	(E)	9.4	2.2	AUG	1	80.0	9.4	2.2
Sep 14	90.0	(E)	8.3	2.4	SEP	1	90.0	8.3	2.4
Oct 13	166.2	(I)	11.3	2.5	OCT	1	166.2	11.3	2.5
Nov 16	187.7	(I)	11.6	3.0	NOV	1	187.7	11.6	3.0
Dec 15	156.0	(I)	8.4	2.8	DEC	1	156.0	8.4	2.8
Jan 12	150.0	(E)	14.0	2.9	JAN	1	150.0	14.0	2.9
Feb 9	200.0	(E)	36.5	5.7	FEB	1	200.0	36.5	5.7
Mar 8	211.0	(I)	22.0	4.0	MAR	2	213.5	22.8	4.9
Mar 29	215.9	(I)	23.5	5.8					
Apr 12	230.6	(I)	30.3	7.1	APR	2	278.4	46.0	8.7
Apr 20	326.2	(I)	61.7	10.3					
May 2	251.8	(I)	24.2	5.2	MAY	2	273.2	26.9	5.4
May 17	294.6	(I)	29.5	5.5					
May 31	350.0	(E)	64.9	10.5	JUN	2	257.1	35.4	6.1
Jun 14	164.1	(I)	5.9	1.7					
N=	17		17	17		17	12	12	12
Max	350.0		64.9	10.5			278.4	46.0	8.7
Min	80.0		5.9	1.7			80.0	7.7	2.1
Mean	194.4		22.2	4.5			180.6	19.8	4.1
Annual Load(tons/yr)			4155.48	823.65					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	67%	High Level of Protection	0.5
Moderate Level of Protection	33%	Moderate Level of Protection	1.4
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.79

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 11 Clark Fork at Gold Creek Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	172.0	(M)	2.9	1.0	JUL	2	287.0	9.2	2.2
Jul 27	283.0	(M)	15.4	3.3					
Aug 10	138.0	(M)	7.9	1.9	AUG	1	176.0	7.9	1.9
Sep 15	155.0	(M)	7.5	2.0	SEP	1	175.0	7.5	2.0
Oct 14	263.0	(M)	14.5	2.6	OCT	1	247.0	14.5	2.6
Nov 17	270.0	(E)	11.6	2.4	NOV	1	273.0	11.6	2.4
Dec 16	240.0	(E)	4.0	1.1	DEC	1	250.0	4.0	1.1
Jan 13	190.0	(E)	3.1	0.8	JAN	1	199.0	3.1	0.8
Feb 10	260.0	(E)	25.8	4.1	FEB	1	262.0	25.8	4.1
Mar 8	282.0	(M)	23.7	5.0	MAR	2	306.0	20.5	4.4
Mar 30	307.0	(M)	17.2	3.7					
Apr 13	358.0	(M)	49.3	8.5	APR	2	410.0	64.0	10.6
Apr 20	550.0	(M)	78.7	12.6					
May 2	427.0	(M)	19.1	4.2	MAY	2	577.0	31.0	5.5
May 18	767.0	(M)	42.8	6.7					
Jun 1	971.0	(M)	44.8	6.9	JUN	2	376.0	26.5	4.4
Jun 15	341.0	(M)	8.1	1.9					
N=	17		17	17		17	12	12	12
Max	971.0		78.7	12.6			577.0	64.0	10.6
Min	138.0		2.9	0.8			175.0	3.1	0.8
Mean	351.4		22.1	4.0			294.8	18.8	3.5
Annual Load(tons/yr)			6582.42	1189.15					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	67%	High Level of Protection	0.4
Moderate Level of Protection	33%	Moderate Level of Protection	1.5
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.75

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 12 Clark Fork at Bonita

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	286.0	(M)	3.2	1.0	JUL	2	458.0	14.1	2.7
Jul 27	525.0	(E)	24.9	4.4					
Aug 10	208.0	(M)	1.3	0.5	AUG	1	281.0	1.3	0.5
Sep 15	221.0	(M)	3.9	1.3	SEP	1	271.0	3.9	1.3
Oct 14	451.0	(M)	25.4	4.2	OCT	1	428.0	25.4	4.2
Nov 17	476.0	(M)	12.1	2.5	NOV	1	463.0	12.1	2.5
Dec 16	390.0	(E)	3.2	0.9	DEC	1	436.0	3.2	0.9
Jan 13	410.0	(E)	9.3	1.6	JAN	1	365.0	9.3	1.6
Feb 10	449.0	(M)	17.9	3.3	FEB	1	440.0	17.9	3.3
Mar 8	480.0	(M)	28.4	5.0	MAR	2	490.0	21.9	4.3
Mar 30	497.0	(M)	15.4	3.5					
Apr 13	512.0	(M)	35.8	6.8	APR	2	560.0	70.2	11.5
Apr 20	703.0	(M)	104.6	16.2					
May 2	508.0	(M)	18.3	3.7	MAY	2	698.0	30.1	5.3
May 18	843.0	(M)	41.8	6.9					
Jun 1	1330.0	(M)	86.2	11.9	JUN	2	572.0	47.2	6.9
Jun 15	506.0	(M)	8.1	1.8					
N=	17		17	17		17	12	12	12
Max	1330.0		104.6	16.2			698.0	70.2	11.5
Min	208.0		1.3	0.5			271.0	1.3	0.5
Mean	517.4		25.9	4.4			455.2	21.4	3.7
Annual Load(tons/yr)			11016.98	1898.95					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	67%	High Level of Protection	0.4
Moderate Level of Protection	33%	Moderate Level of Protection	1.7
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.85

NOTE: Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l, Moderate Level 25-80 mg/l, Low Level 80-400 mg/l, Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 13 Clark Fork at Turah

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	678.0	(M)	3.7	1.2	JUL	2	837.0	8.2	2.2
Jul 27	868.0	(M)	12.6	3.1					
Aug 10	411.0	(M)	2.8	1.0	AUG	1	490.0	2.8	1.0
Sep 15	398.0	(M)	3.4	1.2	SEP	1	462.0	3.4	1.2
Oct 14	625.0	(M)	13.3	2.7	OCT	1	611.0	13.3	2.7
Nov 17	652.0	(M)	6.8	1.7	NOV	1	643.0	6.8	1.7
Dec 16	527.0	(M)	3.1	0.9	DEC	1	599.0	3.1	0.9
Jan 13	620.0	(E)	6.6	1.4	JAN	1	560.0	6.6	1.4
Feb 10	611.0	(M)	11.7	2.3	FEB	1	619.0	11.7	2.3
Mar 8	704.0	(M)	22.4	4.4	MAR	2	716.0	18.4	3.7
Mar 30	739.0	(M)	14.4	3.0					
Apr 13	901.0	(M)	26.5	4.9	APR	2	1090.0	49.7	8.6
Apr 20	1620.0	(M)	72.9	12.3					
May 2	1190.0	(M)	11.6	2.7	MAY	2	1890.0	34.1	5.8
May 18	2530.0	(M)	56.5	8.9					
Jun 1	2620.0	(M)	51.8	7.8	JUN	2	1462.0	29.7	4.8
Jun 15	1370.0	(M)	7.5	1.8					
N=	17		17	17		17	12	12	12
Max	2620.0		72.9	12.3			1890.0	49.7	8.6
Min	398.0		2.8	0.9			462.0	2.8	0.9
Mean	1003.8		19.3	3.6			831.6	15.6	3.0
Annual Load(tons/yr)			17216.12	3142.68					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	75%	High Level of Protection	0.3
Moderate Level of Protection	25%	Moderate Level of Protection	1.5
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.63

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 14 Blackfoot River at USGS station near mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	634.0	(M)	2.1	0.8	JUL	2	634.0	2.8	1.1
Jul 27	633.0	(M)	3.5	1.4					
Aug 10	450.0	(M)	2.0	0.9	AUG	1	471.0	2.0	0.9
Sep 15	370.0	(M)	1.7	0.9	SEP	1	387.0	1.7	0.9
Oct 14	376.0	(M)	1.0	0.5	OCT	1	370.0	1.0	0.5
Nov 17	384.0	(M)	0.6	0.6	NOV	0.	369.0	0.6	0.6
Dec 16	330.0	(E)	1.0	0.5	DEC	1	332.0	1.0	0.5
Jan 13	380.0	(E)	1.3	0.5	JAN	1	348.0	1.3	0.5
Feb 10	410.0	(E)	2.5	0.8	FEB	1	367.0	2.5	0.8
Mar 8	400.0	(M)	4.0	1.2	MAR	2	435.0	4.3	1.2
Mar 30	516.0	(M)	4.6	1.1					
Apr 13	770.0	(M)	13.9	3.5	APR	2	1231.0	16.2	3.7
Apr 20	2440.0	(M)	18.5	3.8					
May 2	1450.0	(M)	4.8	1.4	MAY	2	2680.0	12.7	2.1
May 18	3510.0	(M)	20.5	2.8					
Jun 1	3300.0	(M)	30.9	3.9	JUN	2	1808.0	17.9	2.5
Jun 15	1650.0	(M)	4.9	1.1					
N=	17		17	17		16	12	12	12
Max	3510.0		30.9	3.9			2680.0	17.9	3.7
Min	330.0		0.6	0.5			332.0	0.6	0.5
Mean	1059.0		6.9	1.5			786.0	5.3	1.3
Annual Load(tons/yr)			7681.28	1446.45					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.21

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 15 Clark Fork below Milltown Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1280.0	(M)	6.0	1.4	JUL	2	1434.0	5.8	1.5
Jul 27	1480.0	(M)	5.6	1.6					
Aug 10	892.0	(M)	4.8	1.3	AUG	1	963.0	4.8	1.3
Sep 15	916.0	(M)	4.0	1.3	SEP	1	858.0	4.0	1.3
Oct 14	1040.0	(M)	2.9	0.8	OCT	1	991.0	2.9	0.8
Nov 17	1060.0	(M)	1.7	0.8	NOV	1	1030.0	1.7	0.8
Dec 16	921.0	(M)	1.4	0.6	DEC	1	982.0	1.4	0.6
Jan 13	930.0	(E)	1.3	0.5	JAN	1	895.0	1.3	0.5
Feb 10	998.0	(M)	2.4	0.8	FEB	1	981.0	2.4	0.8
Mar 8	1140.0	(M)	5.2	1.5	MAR	2	1149.0	5.2	1.4
Mar 30	1250.0	(M)	5.2	1.3					
Apr 13	1590.0	(M)	9.6	2.2	APR	2	2268.0	12.5	2.7
Apr 20	3940.0	(M)	15.4	3.1					
May 2	2590.0	(M)	6.5	1.5	MAY	2	4480.0	15.3	3.0
May 18	6000.0	(M)	24.0	4.4					
Jun 1	5870.0	(M)	25.1	3.5	JUN	2	3229.0	15.8	2.4
Jun 15	2950.0	(M)	6.4	1.3					
N=	17		17	17		17	12	12	12
Max	6000.0		25.1	4.4			4480.0	15.8	3.0
Min	892.0		1.3	0.5			858.0	1.3	0.5
Mean	2049.8		7.5	1.6			1605.0	6.1	1.4
Annual Load(tons/yr)			14740.73	3004.16					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.24

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 16 Clark Fork above Missoula WWTP

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1280.0	(E)	5.8	1.4	JUL	2	1434.0	5.3	1.5
Jul 27	1480.0	(E)	4.8	1.5					
Aug 11	892.0	(E)	5.2	1.4	AUG	1	963.0	5.2	1.4
Sep 15	916.0	(E)	6.5	1.8	SEP	1	858.0	6.5	1.8
Oct 14	1040.0	(E)	4.1	1.0	OCT	1	991.0	4.1	1.0
Nov 17	1060.0	(E)	1.9	0.9	NOV	1	1030.0	1.9	0.9
Dec 16	921.0	(E)	2.3	0.9	DEC	1	982.0	2.3	0.9
Jan 13	930.0	(E)	1.3	0.5	JAN	1	895.0	1.3	0.5
Feb 10	998.0	(E)	17.0	2.7	FEB	1	981.0	17.0	2.7
Mar 8	1140.0	(E)	6.4	1.8	MAR	2	1149.0	6.4	1.7
Mar 30	1250.0	(E)	6.4	1.6					
Apr 13	1590.0	(E)	11.3	2.5	APR	2	2268.0	13.5	2.8
Apr 20	3940.0	(E)	15.7	3.1					
May 2	2590.0	(E)	6.6	1.6	MAY	2	4480.0	14.9	2.9
May 18	6000.0	(E)	23.2	4.2					
Jun 1	5870.0	(E)	25.2	3.5	JUN	2	3229.0	15.8	2.5
Jun 15	2950.0	(E)	6.3	1.4					
N=	17		17	17		17	12	12	12
Max	6000.0		25.2	4.2			4480.0	17.0	2.9
Min	892.0		1.3	0.5			858.0	1.3	0.5
Mean	2049.8		8.8	1.9			1605.0	7.8	1.7
Annual Load(tons/yr)			16324.63	3281.69					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.31

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 17 Missoula WWTP discharge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	13.6	(I)	3.3	3.2	JUL	2	11.3	4.5	4.4
Jul 27	14.2	(I)	5.7	5.6					
Aug 11	10.2	(I)	3.1	3.1	AUG	1	11.0	3.1	3.1
Sep 15	13.1	(I)	2.7	3.2	SEP	1	9.6	2.7	3.2
Oct 14	12.7	(I)	14.5	13.8	OCT	1	8.7	14.5	13.8
Nov 17	11.1	(I)	3.9	4.3	NOV	1	9.3	3.9	4.3
Dec 16	11.4	(I)	6.4	6.0	DEC	1	8.7	6.4	6.0
Jan 13	9.4	(M)	10.7	9.4	JAN	1	9.3	10.7	9.4
Feb 10	12.4	(I)	7.5	6.5	FEB	1	10.0	7.5	6.5
Mar 8	13.7	(I)	3.9	3.9	MAR	2	10.6	3.7	3.5
Mar 30	13.5	(I)	3.4	3.1					
Apr 13	13.8	(I)	6.8	6.0	APR	2	11.3	8.1	7.0
Apr 20	13.9	(I)	9.4	7.9					
May 2	12.5	(I)	15.9	14.0	MAY	2	10.8	11.5	9.9
May 18	14.2	(I)	7.0	5.8					
Jun 1	14.5	(I)	3.4	2.3	JUN	2	12.2	5.5	4.2
Jun 15	14.9	(I)	7.6	6.1					
N=	17		17	17		17	12	12	12
Max	14.9		15.9	14.0			12.2	14.5	13.8
Min	9.4		2.7	2.3			8.7	2.7	3.1
Mean	12.9		6.8	6.1			10.2	6.8	6.3
Annual Load(tons/yr)			67.56	61.74					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.27

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 18 Clark Fork at Shuffield's

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1280.0	(E)	5.6	1.5	JUL	2	1434.0	5.2	1.6
Jul 27	1480.0	(E)	4.8	1.6					
Aug 11	892.0	(E)	4.1	1.2	AUG	1	963.0	4.1	1.2
Sep 5	916.0	(E)	6.0	1.3	SEP	1	858.0	6.0	1.3
Oct 14	1040.0	(E)	3.7	1.1	OCT	1	991.0	3.7	1.1
Nov 17	1060.0	(E)	1.8	0.9	NOV	1	1030.0	1.8	0.9
Dec 16	921.0	(E)	1.8	0.8	DEC	1	982.0	1.8	0.8
Jan 13	930.0	(E)	1.5	0.6	JAN	1	895.0	1.5	0.6
Feb 10	998.0	(E)	15.5	2.7	FEB	1	981.0	15.5	2.7
Mar 8	1140.0	(E)	6.2	1.8	MAR	2	1149.0	6.6	1.8
Mar 30	1250.0	(E)	7.0	1.7					
Apr 13	1590.0	(E)	12.2	2.7	APR	2	2268.0	14.6	3.0
Apr 20	3940.0	(E)	17.0	3.3					
May 2	2590.0	(E)	6.4	1.6	MAY	2	4480.0	16.2	3.1
May 18	6000.0	(E)	25.9	4.5					
Jun 1	5870.0	(E)	24.5	3.9	JUN	2	3229.0	15.2	2.7
Jun 15	2950.0	(E)	5.9	1.4					
N=	17		17	17		17	12	12	12
Max	6000.0		25.9	4.5			4480.0	16.2	3.1
Min	892.0		1.5	0.6			858.0	1.5	0.6
Mean	2049.8		8.8	1.9			1605.0	7.7	1.7
Annual Load(tons/yr)			16556.08	3400.28					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.31

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 19 Bitterroot River near mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	560.0	(E)	2.1	0.8	JUL	2	673.0	3.0	1.1
Jul 27	860.0	(E)	3.9	1.4					
Aug 11	368.0	(E)	5.0	1.5	AUG	1	510.0	5.0	1.5
Sep 15	374.0	(E)	6.4	1.5	SEP	1	420.0	6.4	1.5
Oct 14	540.0	(E)	2.0	0.8	OCT	1	564.0	2.0	0.8
Nov 17	480.0	(E)	1.3	0.8	NOV	1	513.0	1.3	0.8
Dec 16	259.0	(E)	1.0	0.5	DEC	1	432.0	1.0	0.5
Jan 13	520.0	(E)	2.4	0.9	JAN	1	461.0	2.4	0.9
Feb 10	652.0	(E)	11.7	2.7	FEB	1	560.0	11.7	2.7
Mar 8	710.0	(E)	8.3	2.1	MAR	2	689.0	7.5	1.9
Mar 30	880.0	(E)	6.6	1.7					
Apr 13	1410.0	(E)	24.9	5.2	APR	2	2637.0	25.2	4.6
Apr 20	5470.0	(E)	25.5	3.9					
May 2	2790.0	(E)	14.6	1.2	MAY	2	4942.0	25.4	3.1
May 18	6900.0	(E)	36.2	4.9					
Jun 1	6530.0	(E)	14.3	1.9	JUN	2	5043.0	10.7	1.7
Jun 15	4390.0	(E)	7.1	1.5					
N=	17		17	17		17	12	12	12
Max	6900.0		36.2	5.2			5043.0	25.4	4.6
Min	259.0		1.0	0.5			420.0	1.0	0.5
Mean	1981.9		10.2	2.0			1453.7	8.5	1.8
Annual Load(tons/yr)			22021.47	3446.23					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	83%	High Level of Protection	0.2
Moderate Level of Protection	17%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.34

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 20 Clark Fork at Harper Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1840.0	(M)	6.0	1.5	JUL	2	2107.0	5.3	1.5
Jul 27	2340.0	(M)	4.6	1.4					
Aug 11	1260.0	(M)	5.7	1.6	AUG	1	1473.0	5.7	1.6
Sep 15	1290.0	(M)	7.4	2.1	SEP	1	1278.0	7.4	2.1
Oct 14	1580.0	(M)	2.9	0.9	OCT	1	1555.0	2.9	0.9
Nov 18	1540.0	(M)	1.9	0.9	NOV	1	1543.0	1.9	0.9
Dec 16	1180.0	(M)	1.4	0.6	DEC	1	1414.0	1.4	0.6
Jan 13	1450.0	(M)	2.4	0.8	JAN	1	1356.0	2.4	0.8
Feb 10	1650.0	(M)	9.9	2.4	FEB	1	1541.0	9.9	2.4
Mar 8	1850.0	(M)	8.5	2.0	MAR	2	1838.0	8.4	2.0
Mar 30	2130.0	(M)	8.3	1.9					
Apr 13	3000.0	(M)	15.3	3.2	APR	2	4905.0	19.2	3.5
Apr 20	9410.0	(M)	23.1	3.7					
May 2	5380.0	(M)	5.8	1.5	MAY	2	9422.0	23.9	3.4
May 18	12900.0	(M)	41.9	5.2					
Jun 1	12400.0	(M)	20.4	3.0	JUN	2	8272.0	13.2	1.9
Jun 15	7340.0	(M)	5.9	0.8					
N=	17		17	17		17	12	12	12
Max	12900.0		41.9	5.2			9422.0	23.9	3.5
Min	1180.0		1.4	0.6			1278.0	1.4	0.6
Mean	4031.8		10.1	2.0			3058.7	8.5	1.8
Annual Load(tons/yr)			41073.67	6914.20					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.34

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 21 Stone Container Corporation discharge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	0.0	(I)			JUL	0	0.0		
Jul 27	0.0	(I)							
Aug 11	0.0	(I)			AUG	0	0.0		
Sep 15	0.0	(I)			SEP	0	0.0		
Oct 14	0.0	(I)			OCT	0	0.0		
Nov 18	0.0	(I)			NOV	0	0.0		
Dec 16	0.0	(I)			DEC	0	0.0		
Jan 13	0.0	(I)			JAN	0	0.0		
Feb 11	0.0	(I)			FEB	0	0.0		
Mar 8	0.0	(I)			MAR	1	0.3	77.6	64.7
Mar 30	1.0	(I)	77.6	64.7					
Apr 13	0.8	(I)	79.2	68.2	APR	2	13.6	77.3	65.6
Apr 20	39.1	(I)	75.4	63.0					
May 2	14.5	(I)	48.9	43.0	MAY	2	32.5	62.4	54.3
May 18	40.8	(I)	75.9	65.5					
Jun 1	46.9	(I)	84.8	77.8	JUN	2	20.6	76.9	69.9
Jun 15	25.1	(I)	69.0	62.0					
N=	17		7	7		7	12	4	4
Max	46.9		84.8	77.8			32.5	77.6	69.9
Min	0.0		48.9	43.0			0.0	62.4	54.3
Mean	9.9		73.0	63.5			5.6	73.6	63.6
Annual Load(tons/yr)			383.53	336.68					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	0%	High Level of Protection	0.0
Moderate Level of Protection	100%	Moderate Level of Protection	2.9
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 2.94

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 22 Clark Fork at Huson

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1840.0	(E)	7.9	1.3	JUL	2	2107.0	6.3	1.4
Jul 27	2340.0	(E)	4.7	1.5					
Aug 11	1260.0	(E)	5.3	1.6	AUG	1	1473.0	5.3	1.6
Sep 15	1290.0	(E)	8.1	2.3	SEP	1	1278.0	8.1	2.3
Oct 14	1580.0	(E)	4.2	1.3	OCT	1	1555.0	4.2	1.3
Nov 18	1540.0	(E)	1.8	0.9	NOV	1	1543.0	1.8	0.9
Dec 17	1180.0	(E)	2.3	0.9	DEC	1	1414.0	2.3	0.9
Jan 14	1450.0	(E)	5.0	1.3	JAN	1	1356.0	5.0	1.3
Feb 11	1650.0	(E)	10.8	2.5	FEB	1	1541.0	10.8	2.5
Mar 8	1850.0	(E)	9.5	2.1	MAR	2	1838.0	8.5	2.1
Mar 30	2130.0	(E)	7.5	2.0					
Apr 13	3000.0	(E)	17.7	3.8	APR	2	4905.0	25.6	4.4
Apr 20	9410.0	(E)	33.5	4.9					
May 2	5380.0	(E)	4.8	1.4	MAY	2	9422.0	24.4	3.6
May 18	12900.0	(E)	44.0	5.8					
Jun 1	12400.0	(E)	22.4	3.3	JUN	2	8272.0	15.1	2.4
Jun 15	7340.0	(E)	7.7	1.5					
N=	17		17	17		17	12	12	12
Max	12900.0		44.0	5.8			9422.0	25.6	4.4
Min	1180.0		1.8	0.9			1278.0	1.8	0.9
Mean	4031.8		11.6	2.3			3058.7	9.8	2.1
Annual Load(tons/yr)			46191.78	7985.20					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.3
Moderate Level of Protection	8%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.39

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 23 Clark Fork near Alberton

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	1840.0	(E)	4.3	1.2	JUL	2	2107.0	4.2	1.3
Jul 27	2340.0	(E)	4.0	1.4					
Aug 11	1260.0	(E)	5.6	1.6	AUG	1	1473.0	5.6	1.6
Sep 15	1290.0	(E)	6.1	1.8	SEP	1	1278.0	6.1	1.8
Oct 14	1580.0	(E)	3.8	1.3	OCT	1	1555.0	3.8	1.3
Nov 18	1540.0	(E)	3.1	1.1	NOV	1	1543.0	3.1	1.1
Dec 17	1180.0	(E)	1.7	0.7	DEC	1	1414.0	1.7	0.7
Jan 14	1450.0	(E)	1.5	0.7	JAN	1	1356.0	1.5	0.7
Feb 11	1650.0	(E)	11.4	2.6	FEB	1	1541.0	11.4	2.6
Mar 9	1850.0	(E)	11.3	2.5	MAR	2	1838.0	10.1	2.4
Mar 30	2130.0	(E)	8.8	2.3					
Apr 13	3000.0	(E)	15.4	3.4	APR	2	4905.0	24.6	4.4
Apr 20	9410.0	(E)	33.8	5.4					
May 2	5380.0	(E)	6.4	1.6	MAY	2	9422.0	28.1	4.0
May 18	12900.0	(E)	49.7	6.4					
Jun 1	12400.0	(E)	23.0	2.9	JUN	2	8272.0	15.7	2.2
Jun 15	7340.0	(E)	8.4	1.5					
N=	17		17	17		17	12	12	12
Max	12900.0		49.7	6.4			9422.0	28.1	4.4
Min	1180.0		1.5	0.7			1278.0	1.5	0.7
Mean	4031.8		11.7	2.3			3058.7	9.6	2.0
Annual Load(tons/yr)			48505.47	8115.59					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.3
Moderate Level of Protection	8%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.39

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 24 Clark Fork at Superior

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7		3.2	1.1	JUL	2		3.8	1.3
Jul 27		4.4	1.5					
Aug 12		3.8	1.4	AUG	1		3.8	1.4
Sep 15		6.2	1.4	SEP	1		6.2	1.4
Oct 15		5.0	1.2	OCT	1		5.0	1.2
Nov 18		2.8	1.0	NOV	1		2.8	1.0
Dec 17		1.2	0.6	DEC	1		1.2	0.6
Jan 14		2.1	0.7	JAN	1		2.1	0.7
Feb 11		7.6	1.9	FEB	1		7.6	1.9
Mar 9		9.9	2.5	MAR	2		10.6	2.6
Mar 31		11.2	2.7					
Apr 13		16.4	3.6	APR	2		26.5	4.7
Apr 20		36.5	5.8					
May 2		6.8	1.6	MAY	2		26.5	3.5
May 18		46.2	5.3					
Jun 1		25.6	3.2	JUN	2		16.5	2.3
Jun 15		7.4	1.4					
N=	0	17	17		17	0	12	12
Max		46.2	5.8				26.5	4.7
Min		1.2	0.6				1.2	0.6
Mean		11.5	2.2				9.4	1.9
Annual Load(tons/yr)								

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	83%	High Level of Protection	0.2
Moderate Level of Protection	17%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.38

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 25 Clark Fork above Flathead River

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	2690.0	(M)	3.0	1.3	JUL	2	2895.0	3.6	1.5
Jul 27	3200.0	(M)	4.1	1.6					
Aug 12	1820.0	(M)	2.9	1.2	AUG	1	2038.0	2.9	1.2
Sep 15	1700.0	(M)	4.4	1.5	SEP	1	1782.0	4.4	1.5
Oct 15	2050.0	(M)	3.8	1.1	OCT	1	2032.0	3.8	1.1
Nov 18	2080.0	(M)	2.3	0.8	NOV	1	2027.0	2.3	0.8
Dec 17	1740.0	(M)	0.9	0.5	DEC	1	1910.0	0.9	0.5
Jan 14	2040.0	(M)	1.5	0.6	JAN	1	1851.0	1.5	0.6
Feb 11	2130.0	(M)	0.6	0.3	FEB	1	2023.0	0.6	0.3
Mar 9	2440.0	(M)	9.1	2.3	MAR	2	2565.0	10.3	2.5
Mar 31	3140.0	(M)	11.4	2.6					
Apr 13	4570.0	(M)	14.9	3.2	APR	2	7178.0	27.5	4.3
Apr 20	13800.0	(M)	40.1	5.3					
May 2	7970.0	(M)	6.7	1.7	MAY	2	12320.0	22.8	3.1
May 18	16300.0	(M)	38.9	4.5					
Jun 2	14800.0	(M)	18.3	2.8	JUN	2	10520.0	12.5	2.2
Jun 16	9230.0	(M)	6.7	1.5					
N=	17		17	17		17	12	12	12
Max	16300.0		40.1	5.3			12320.0	27.5	4.3
Min	1700.0		0.6	0.3			1782.0	0.6	0.3
Mean	5394.1		10.0	1.9			4095.1	7.8	1.6
Annual Load(tons/yr)			55730.63	9318.23					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.2
Moderate Level of Protection	8%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.31

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 26 Flathead River near mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	6110.0	(M)	1.2	0.4	JUL	2	6943.0	1.5	0.6
Jul 27	10300.0	(M)	1.7	0.7					
Aug 12	5190.0	(M)	1.0	0.5	AUG	1	7921.0	1.0	0.5
Sep 15	11500.0	(M)	1.4	0.7	SEP	1	11410.0	1.4	0.7
Oct 15	10900.0	(M)	3.9	0.7	OCT	1	10870.0	3.9	0.7
Nov 18	10300.0	(M)	1.3	0.6	NOV	1	9600.0	1.3	0.6
Dec 17	12400.0	(M)	0.7	0.4	DEC	1	9855.0	0.7	0.4
Jan 14	6600.0	(E)	3.0	0.6	JAN	1	6103.0	3.0	0.6
Feb 11	5820.0	(M)	56.4	4.0	FEB	1	9466.0	56.4	4.0
Mar 9	11900.0	(M)	5.9	1.0	MAR	2	12690.0	4.4	0.8
Mar 31	12500.0	(M)	2.8	0.6					
Apr 13	11900.0	(M)	3.0	0.6	APR	2	11870.0	4.2	0.7
Apr 20	10700.0	(M)	5.3	0.7					
May 3	12600.0	(M)	2.9	0.7	MAY	2	9352.0	4.6	0.9
May 19	7360.0	(M)	6.3	1.0					
Jun 2	4400.0	(M)	6.6	0.8	JUN	2	10220.0	4.3	0.7
Jun 16	6820.0	(M)	1.9	0.5					
N=	17		17	17		17	12	12	12
Max	12600.0		56.4	4.0			12690.0	56.4	4.0
Min	4400.0		0.7	0.4			6103.0	0.7	0.4
Mean	9252.9		6.2	0.9			9691.7	7.2	0.9
Annual Load(tons/yr)			65438.07	8562.67					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	92%	High Level of Protection	0.1
Moderate Level of Protection	8%	Moderate Level of Protection	2.3
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.29

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	8800.0	(M)	2.6	0.8	JUL	2	9715.0	2.8	0.9
Jul 27	13600.0	(M)	3.0	1.0					
Aug 13	7260.0	(M)	1.8	0.7	AUG	1	9813.0	1.8	0.7
Sep 15	13600.0	(m)	2.2	0.5	SEP	1	13300.0	2.2	0.5
Oct 15	12900.0	(M)	2.0	0.7	OCT	1	12890.0	2.0	0.7
Nov 18	12700.0	(M)	1.5	0.7	NOV	1	11580.0	1.5	0.7
Dec 17	14300.0	(M)	0.9	0.4	DEC	1	11760.0	0.9	0.4
Jan 14	8710.0	(M)			JAN	0	7959.0		
Feb 11	7970.0	(M)	11.6	1.6	FEB	1	11510.0	11.6	1.6
Mar 9	14500.0	(M)	4.5	1.1	MAR	2	15590.0	4.7	1.1
Mar 31	16200.0	(M)	4.8	1.1					
Apr 13	16600.0	(M)	5.5	1.3	APR	2	19510.0	20.4	3.5
Apr 20	25300.0	(M)	35.2	5.6					
May 3	21100.0	(M)	5.3	1.1	MAY	2	22190.0	14.3	1.9
May 18	26600.0	(M)	23.2	2.6					
Jun 2	19900.0	(M)	15.9	2.0	JUN	2	21210.0	9.8	1.4
Jun 16	15400.0	(M)	3.6	0.8					
N=	17		16	16		16	12	11	11
Max	26600.0		35.2	5.6			22190.0	20.4	3.5
Min	7260.0		0.9	0.4			7959.0	0.9	0.4
Mean	15025.9		7.7	1.4			13918.9	6.5	1.2
Annual Load(tons/yr)			101924.82	17738.96					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.26

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 28 Clark Fork below Thompson Falls Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 7	9268.0	(M)	4.9	1.2	JUL	2	10170.0	5.4	1.3
Jul 27	13470.0	(M)	5.8	1.4					
Aug 13	7577.0	(M)	4.7	1.2	AUG	1	10274.0	4.7	1.2
Sep 15	14589.0	(M)	3.5	0.6	SEP	1	13590.0	3.5	0.6
Oct 15	14085.0	(M)	2.3	0.6	OCT	1	13364.0	2.3	0.6
Nov 18	13069.0	(M)	1.7	0.7	NOV	1	11670.0	1.7	0.7
Dec 17	14529.0	(M)	1.1	0.4	DEC	1	12190.0	1.1	0.4
Jan 14	9522.0	(M)	1.0	0.4	JAN	1	8420.0	1.0	0.4
Feb 11	8814.0	(M)	2.0	0.6	FEB	1	11615.0	2.0	0.6
Mar 9	14903.0	(M)	3.0	0.9	MAR	2	15675.0	3.4	0.9
Mar 31	16234.0	(M)	3.7	0.9					
Apr 13	17439.0	(M)	3.4	0.9	APR	2	19789.0	11.7	2.1
Apr 20	24655.0	(M)	19.9	3.3					
May 3	21570.0	(M)	7.4	1.5	MAY	2	22444.0	12.3	2.1
May 18	26441.0	(M)	17.1	2.7					
Jun 2	20366.0	(M)	12.1	1.7	JUN	2	21604.0	9.8	1.5
Jun 16	15348.0	(M)	7.4	1.2					
N=	17		17	17		17	12	12	12
Max	26441.0		19.9	3.3			22444.0	12.3	2.1
Min	7577.0		1.0	0.4			8420.0	1.0	0.4
Mean	15404.6		5.9	1.2			14233.8	4.9	1.0
Annual Load(tons/yr)			83200.34	16347.65					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.20

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 29 Clark Fork at Noxon Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 8	12200.0	(M)	0.8	0.4	JUL	2	9628.0	0.8	0.5
Jul 28	15900.0	(M)	0.8	0.6					
Aug 13	4380.0	(M)	0.7	0.5	AUG	1	9230.0	0.7	0.5
Sep 16	16500.0	(M)	1.7	1.0	SEP	1	12730.0	1.7	1.0
Oct 15	10200.0	(M)	1.6	0.5	OCT	1	12260.0	1.6	0.5
Nov 19	15100.0	(M)	1.1	0.6	NOV	1	11240.0	1.1	0.6
Dec 17	12900.0	(M)	0.7	0.4	DEC	1	11110.0	0.7	0.4
Jan 14	11200.0	(M)	0.5	0.4	JAN	1	7625.0	0.5	0.4
Feb 11	8700.0	(M)	0.5	0.4	FEB	1	11040.0	0.5	0.4
Mar 9	15600.0	(M)	1.4	0.5	MAR	2	15540.0	1.5	0.5
Mar 31	20000.0	(M)	1.5	0.5					
Apr 14	17900.0	(M)	2.9	0.7	APR	2	20970.0	2.9	0.7
Apr 21	30800.0	(M)	2.8	0.7					
May 3	20100.0	(M)	2.3	0.8	MAY	2	22650.0	2.3	0.7
May 19	24200.0	(M)	2.3	0.6					
Jun 2	21400.0	(M)	2.2	0.6	JUN	2	20970.0	2.3	0.7
Jun 16	17200.0	(M)	2.3	0.7					
N=	17		17	17		17	12	12	12
Max	30800.0		2.9	1.0			22650.0	2.9	1.0
Min	4380.0		0.5	0.4			7625.0	0.5	0.4
Mean	16134.1		1.5	0.6			13749.4	1.4	0.6
Annual Load(tons/yr)			21837.65	8096.24					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.1
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.05

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

CLARK FORK BASIN MONITORING - FY 1988 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 30 Clark Fork below Cabinent Gorge Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 8	16700.0	(M)	1.6	0.7	JUL	2	12180.0	1.6	0.8
Jul 28	19600.0	(M)	1.5	0.8					
Aug 13	7230.0	(M)	1.3	0.6	AUG	1	11390.0	1.3	0.6
Sep 16	19700.0	(M)	2.9	1.0	SEP	1	14770.0	2.9	1.0
Oct 15	12500.0	(M)	1.4	0.6	OCT	1	13990.0	1.4	0.6
Nov 19	16100.0	(M)	1.2	0.7	NOV	1	12980.0	1.2	0.7
Dec 17	15700.0	(M)	0.7	0.4	DEC	1	12990.0	0.7	0.4
Jan 14	12700.0	(M)	0.3	0.3	JAN	1	8986.0	0.3	0.3
Feb 11	9820.0	(M)	0.6	0.3	FEB	1	12880.0	0.6	0.3
Mar 9	17800.0	(M)	1.6	0.5	MAR	2	17830.0	1.9	0.6
Mar 31	21600.0	(M)	2.2	0.6					
Apr 14	22900.0	(M)	2.1	0.8	APR	2	25220.0	2.6	0.8
Apr 21	36100.0	(M)	3.0	0.7					
May 3	23700.0	(M)	3.1	0.9	MAY	2	26990.0	3.0	0.8
May 19	27900.0	(M)	2.8	0.7					
Jun 2	25300.0	(M)	2.5	0.7	JUN	2	24630.0	2.3	0.7
Jun 16	21800.0	(M)	2.0	0.6					
N=	17		17	17		17	12	12	12
Max	36100.0		3.1	1.0			26990.0	3.0	1.0
Min	7230.0		0.3	0.3			8986.0	0.3	0.3
Mean	19244.1		1.8	0.6			16236.3	1.6	0.6
Annual Load(tons/yr)			29903.22	10361.90					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.1
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.07

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400 mg/l.

A P P E N D I X F

FY 1989

CLARK FORK BASIN

SUSPENDED SEDIMENT MONITORING DATA

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 00 Silver Bow Creek above Butte WWTP

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	6.3 (I)	3.6	1.4	JUL	1	6.3	3.6	1.4
Aug 15	8.1 (I)	4.0	1.3	AUG	1	8.1	4.0	1.3
Sep 12	8.1 (I)	7.4	2.8	SEP	1	8.1	7.4	2.8
Oct 11	8.3 (I)	6.5	1.9	OCT	1	8.3	6.5	1.9
Nov 14	7.7 (I)	14.9	3.5	NOV	1	7.7	14.9	3.5
Dec 12	7.3 (I)	12.1	2.9	DEC	1	7.3	12.1	2.9
Jan 17	6.7 (I)	9.5	2.2	JAN	1	6.7	9.5	2.2
				FEB	0			
Mar 20	11.5 (I)	14.6	3.6	MAR	1	11.5	14.6	3.6
Apr 5	13.8 (I)	11.1	3.0	APR	2	16.8	11.9	2.9
Apr 18	19.8 (I)	12.6	2.7					
May 2	16.2 (I)	9.5	2.4	MAY	3	18.1	12.2	2.7
May 16	22.6 (I)	20.0	3.9					
May 30	15.5 (I)	7.1	1.9	JUN	2	9.7	4.4	1.5
Jun 14	10.1 (I)	5.1	1.7					
Jun 26	9.2 (I)	3.7	1.2					
N=	15	14	14		15	11	11	11
Max	22.6	20.0	3.9			18.1	14.9	3.6
Min	6.3	3.6	1.2			6.3	3.6	1.3
Mean	11.4	9.4	2.4			9.9	9.2	2.4
Annual Load(tons/yr)		87.93	22.54					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.4
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.37

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 00.5 Butte Metro WWTP discharge

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	7.2 (I)	6.6	5.6	JUL	1	8.5	6.6	5.6
Aug 15	7.6 (I)	2.9	2.2	AUG	1	8.6	2.9	2.2
Sep 12	9.4 (I)	3.9	4.0	SEP	1	8.9	3.9	4.0
Oct 11	8.0 (I)	4.7	4.5	OCT	1	7.7	4.7	4.5
Nov 14	7.6 (I)	3.4	3.2	NOV	1	6.8	3.4	3.2
Dec 12	7.7 (I)	3.8	3.8	DEC	1	6.7	3.8	3.8
Jan 17	7.6 (I)	4.0	3.9	JAN	1	7.6	4.0	3.9
				FEB	0			
Mar 20	7.6 (I)	9.6	8.7	MAR	1	7.6	9.6	8.7
Apr 5	8.0 (I)	7.3	6.6	APR	2	8.3	6.8	6.1
Apr 18	8.5 (I)	6.3	5.5					
May 2	8.3 (I)	5.5	5.1	MAY	3	8.3	5.0	4.4
May 16	8.3 (I)	5.0	4.4					
May 30	8.3 (I)	4.4	3.7	JUN	2	6.9	5.3	4.6
Jun 14	7.2 (I)	3.9	3.4					
Jun 26	6.7 (I)	6.7	5.7					
N=	15	14	14		15	11	11	11
Max	9.4	9.6	8.7			8.9	9.6	8.7
Min	6.7	2.9	2.2			6.7	2.9	2.2
Mean	7.9	5.2	4.7			7.8	5.1	4.6
Annual Load(tons/yr)		36.14	32.81					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.20

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 01 Silver Bow Creek below Colorado Tailings

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	15.0	(M)	10.8	2.9	JUL	1	16.5	10.8	2.9
Aug 15	21.0	(M)	6.9	2.5	AUG	1	18.7	6.9	2.5
Sep 12	18.0	(M)	10.7	3.6	SEP	1	16.9	10.7	3.6
Oct 11	16.0	(M)	12.0	4.1	OCT	1	16.0	12.0	4.1
Nov 14	13.0	(M)	37.1	9.4	NOV	1	13.0	37.1	9.4
Dec 12	20.6	(I)	27.9	8.0	DEC	1	20.6	27.9	8.0
Jan 17			35.3	5.9	JAN	1	ERR	35.3	5.9
					FEB	0			
Mar 20			20.7	6.7	MAR	1	ERR	20.7	6.7
Apr 5			15.5	5.7	APR	2	ERR	20.1	6.4
Apr 18			24.6	7.1					
May 2			11.8	4.2	MAY	3	ERR	13.8	4.2
May 16			20.2	5.0					
May 30			9.5	3.5	JUN	2	ERR	6.8	3.1
Jun 14			6.9	2.9					
Jun 26			6.6	3.3					
N=	6		14	14		15	11	11	11
Max	21.0		37.1	9.4			ERR	37.1	9.4
Min	13.0		6.6	2.5			ERR	6.8	2.5
Mean	17.3		17.1	5.0			ERR	18.4	5.2
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	73%	High Level of Protection	0.5
Moderate Level of Protection	27%	Moderate Level of Protection	1.3
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.73

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 02 Silver Bow Creek at Miles Crossing near Ramsay

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	13.5 (I)	8.4	3.4	JUL	1	13.5	8.4	3.4
Aug 15	11.7 (I)	9.4	2.9	AUG	1	11.7	9.4	2.9
Sep 12	21.0 (I)	11.8	3.5	SEP	1	21.0	11.8	3.5
Oct 11	19.4 (I)	10.4	3.8	OCT	1	19.4	10.4	3.8
Nov 14	24.6 (I)	10.3	2.8	NOV	1	24.6	10.3	2.8
Dec 12	23.2 (I)	14.6	3.8	DEC	1	23.2	14.6	3.8
Jan 17		15.5	4.2	JAN	1	ERR	15.5	4.2
				FEB	0			
Mar 20	24.9 (I)	23.5	6.5	MAR	1	24.9	23.5	6.5
Apr 5	33.9 (I)	15.1	4.2	APR	2	42.3	23.5	6.0
Apr 18	50.7 (I)	31.9	7.8					
May 2	44.2 (I)	13.3	3.7	MAY	3	41.0	22.9	5.3
May 16	46.0 (I)	43.3	8.4					
May 30	32.8 (I)	12.0	3.8	JUN	2	27.3	10.0	3.8
Jun 14	30.8 (I)	10.7	3.8					
Jun 26	23.7 (I)	9.3	3.8					
N=	14	14	14		15	11	11	11
Max	50.7	43.3	8.4			ERR	23.5	6.5
Min	11.7	8.4	2.8			ERR	8.4	2.8
Mean	28.6	16.0	4.4			ERR	14.6	4.2
Annual Load(tons/yr)		ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.6
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.58

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 03 Silver Bow Creek at frontage road above Warm Springs Ponds

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	28.6	(I)	11.9	5.2	JUL	1	28.6	11.9	5.2
Aug 15	16.3	(I)	13.4	5.0	AUG	1	16.3	13.4	5.0
Sep 12	29.2	(I)	32.1	11.5	SEP	1	29.2	32.1	11.5
Oct 11	26.6	(I)	12.7	5.1	OCT	1	26.6	12.7	5.1
Nov 14	31.1	(I)	15.5	4.7	NOV	1	31.1	15.5	4.7
Dec 12	34.3	(I)	43.6	11.6	DEC	1	34.3	43.6	11.6
Jan 17	27.1	(I)	8.3	2.5	JAN	1	27.1	8.3	2.5
					FEB	0			
Mar 20	34.7	(I)	22.3	5.4	MAR	1	34.7	22.3	5.4
Apr 5	45.6	(I)	16.8	4.4	APR	2	57.0	23.7	5.5
Apr 18	68.3	(I)	30.6	6.5					
May 2	68.5	(I)	13.3	3.5	MAY	3	73.8	39.7	8.5
May 16	90.0	(I)	93.9	18.3					
May 30	63.0	(I)	12.0	3.7	JUN	2	47.7	10.4	3.6
Jun 14	54.9	(I)	11.7	3.7					
Jun 26	40.4	(I)	9.0	3.5					
N=	15		14	14		15	11	11	11
Max	90.0		93.9	18.3			73.8	43.6	11.6
Min	16.3		8.3	2.5			16.3	8.3	2.5
Mean	43.9		23.1	6.3			36.9	21.2	6.2
Annual Load(tons/yr)			792.15	215.49					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	73%	High Level of Protection	0.6
Moderate Level of Protection	27%	Moderate Level of Protection	1.5
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.85

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 04 Discharge from AMC Pond 2 (Silver Bow Creek)

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	22.6 (I)	2.1	1.2	JUL	1	22.6	2.1	1.2
Aug 15	5.7 (I)	1.3	0.7	AUG	1	5.7	1.3	0.7
Sep 13	4.6 (I)	1.5	0.9	SEP	1	4.6	1.5	0.9
Oct 11	17.7 (I)	1.7	1.2	OCT	1	17.7	1.7	1.2
Nov 14	12.5 (I)	3.1	1.7	NOV	1	12.5	3.1	1.7
Dec 12	19.0 (I)	1.8	1.1	DEC	1	19.0	1.8	1.1
Jan 17	23.4 (I)	2.1	1.1	JAN	1	23.4	2.1	1.1
				FEB	0			
Mar 20	78.9 (I)	34.1	8.4	MAR	1	78.9	34.1	8.4
Apr 5	34.2 (I)	17.9	6.6	APR	2	55.7	15.6	6.6
Apr 18	77.2 (I)	13.3	6.5					
May 2	67.9 (I)	9.1	7.8	MAY	3	70.6	5.4	3.9
May 16	77.9 (I)	3.6	2.0					
May 30	66.0 (I)	3.6	1.8	JUN	2	32.1	3.2	1.5
Jun 14	28.1 (I)	1.8	0.9					
Jun 26	36.0 (I)	4.6	2.0					
N=	15	14	14		15	11	11	11
Max	78.9	34.1	8.4			78.9	34.1	8.4
Min	4.6	1.3	0.7			4.6	1.3	0.7
Mean	38.1	6.8	2.9			31.2	6.5	2.6
Annual Load(tons/yr)		353.11	121.75					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.2
Moderate Level of Protection	9%	Moderate Level of Protection	1.4
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.26

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 05 Mill-Willow Bypass at mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	9.6	(I)	3.9	1.6	JUL	1	9.6	3.9	1.6
Aug 15	9.7	(I)	3.8	1.1	AUG	1	9.7	3.8	1.1
Sep 12	9.2	(I)	8.1	2.5	SEP	1	9.2	8.1	2.5
Oct 11	14.6	(I)	11.2	3.3	OCT	1	14.6	11.2	3.3
Nov 14	15.9	(I)	7.0	2.6	NOV	1	15.9	7.0	2.6
Dec 12	18.9	(I)	4.5	1.7	DEC	1	18.9	4.5	1.7
Jan 17	17.1	(I)	6.2	1.9	JAN	1	17.1	6.2	1.9
					FEB	0			
Mar 20	22.9	(I)	10.1	4.1	MAR	1	22.9	10.1	4.1
Apr 5	23.3	(I)	7.6	3.1	APR	2	29.1	8.1	2.2
Apr 18	34.9	(I)	8.6	1.2					
May 2	38.2	(I)	6.8	2.5	MAY	3	57.8	6.4	2.1
May 16	77.9	(I)	8.4	2.3					
May 30	57.4	(I)	4.0	1.4	JUN	2	63.8	4.6	1.5
Jun 14	80.4	(I)	5.6	1.7					
Jun 26	47.1	(I)	3.5	1.3					
N=	15		14	14		15	11	11	11
Max	80.4		11.2	4.1			63.8	11.2	4.1
Min	9.2		3.5	1.1			9.2	3.8	1.1
Mean	31.8		6.6	2.2			24.4	6.7	2.2
Annual Load(tons/yr)			143.64	47.43					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.27

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 06 Warm Springs Creek at mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	1.4	(I)	0.8	0.6	JUL	1	2.2	0.8	0.6
Aug 15	0.4	(I)	0.8	0.5	AUG	1	0.5	0.8	0.5
Sep 12	2.6	(I)	0.6	0.7	SEP	1	2.6	0.6	0.7
Oct 11	9.8	(I)	2.8	1.2	OCT	1	13.4	2.8	1.2
Nov 14	18.2	(I)	2.0	1.3	NOV	1	20.8	2.0	1.3
Dec 12	17.5	(I)	2.8	1.5	DEC	1	12.3	2.8	1.5
Jan 17	5.4	(I)	0.6	0.6	JAN	1	5.4	0.6	0.6
					FEB	0			
Mar 20	25.6	(I)	5.7	2.1	MAR	1	25.6	5.7	2.1
Apr 5	26.2	(I)	4.0	1.5	APR	2	31.1	3.8	1.4
Apr 18	35.9	(I)	3.6	1.2					
May 2	46.1	(I)	5.7	2.0	MAY	3	44.4	5.1	1.7
May 16	43.2	(I)	5.5	1.7					
May 30	43.9	(I)	4.2	1.5	JUN	2	85.7	9.2	2.6
Jun 14	107.8	(I)	11.0	2.9					
Jun 26	63.6	(I)	7.3	2.2					
N=	15		14	14		15	11	11	11
Max	107.8		11.0	2.9			85.7	9.2	2.6
Min	0.4		0.6	0.5			0.5	0.6	0.5
Mean	29.8		3.8	1.4			22.2	3.1	1.3
Annual Load(tons/yr)			114.12	37.60					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.1
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.12

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 07 Clark Fork below Warm Springs Creek

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	34.2	(I)	2.3	1.3	JUL	1	34.2	2.3	1.3
Aug 15	15.1	(I)	6.0	1.6	AUG	1	15.1	6.0	1.6
Sep 12	16.9	(I)	4.7	2.4	SEP	1	16.9	4.7	2.4
Oct 11	48.9	(I)	6.0	2.0	OCT	1	48.9	6.0	2.0
Nov 14	48.5	(I)	2.4	1.6	NOV	1	48.5	2.4	1.6
Dec 12	53.1	(I)	3.5	1.8	DEC	1	53.1	3.5	1.8
Jan 17	45.5	(I)	4.1	1.9	JAN	1	45.5	4.1	1.9
					FEB	0			
Mar 20	122.3	(I)	26.8	6.8	MAR	1	122.3	26.8	6.8
Apr 5	83.7	(E)	7.6	3.0	APR	2	119.9	8.7	3.8
Apr 18	156.1	(I)	9.8	4.5					
May 2	152.2	(E)	9.5	4.2	MAY	3	169.4	7.2	2.8
May 16	193.8	(I)	7.6	2.4					
May 30	162.2	(I)	4.4	1.7	JUN	2	183.5	6.4	2.1
Jun 14	219.4	(I)	8.4	2.4					
Jun 26	147.6	(I)	4.3	1.8					
N=	15		14	14		15	11	11	11
Max	219.4		26.8	6.8			183.5	26.8	6.8
Min	15.1		2.3	1.3			15.1	2.3	1.3
Mean	100.0		7.2	2.6			77.9	7.1	2.5
Annual Load(tons/yr)			639.41	214.81					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.2
Moderate Level of Protection	9%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.28

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 08 Clark Fork near Dempsey

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 11	10.7	(I)	3.6	1.4	JUL	1	10.7	3.6	1.4
Aug 16	3.1	(I)	3.5	1.1	AUG	1	3.1	3.5	1.1
Sep 13	8.1	(I)	2.4	1.4	SEP	1	8.1	2.4	1.4
Oct 12	69.7	(I)	8.2	2.3	OCT	1	69.7	8.2	2.3
Nov 15	89.1	(I)	22.2	4.6	NOV	1	89.1	22.2	4.6
Dec 12	114.8	(I)	17.8	4.5	DEC	1	114.8	17.8	4.5
Jan 17	105.2	(I)	10.9	2.5	JAN	1	105.2	10.9	2.5
					FEB	0			
Mar 21	172.4	(I)	24.3	5.8	MAR	1	172.4	24.3	5.8
Apr 6	176.4	(I)	20.7	5.1	APR	2	197.1	18.5	4.9
Apr 18	217.8	(I)	16.2	4.7					
May 2	217.9	(I)	12.1	4.0	MAY	3	212.9	10.9	3.3
May 16	235.4	(I)	13.6	3.1					
May 30	185.5	(I)	6.9	2.7	JUN	2	154.1	7.8	2.6
Jun 14	187.3	(I)	8.7	2.6					
Jun 26	120.9	(I)	6.8	2.5					
N=	15		14	14		15	11	11	11
Max	235.4		24.3	5.8			212.9	24.3	5.8
Min	3.1		2.4	1.1			3.1	2.4	1.1
Mean	127.6		11.9	3.2			103.4	11.8	3.1
Annual Load(tons/yr)			1413.75	365.62					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.5
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.47

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 09 Clark Fork at Deer Lodge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	40.0	(M)	6.5	1.5	JUL	1	34.3	6.5	1.5
Aug 16	25.0	(M)	2.9	0.9	AUG	1	27.8	2.9	0.9
Sep 13	49.0	(M)	5.0	1.9	SEP	1	57.8	5.0	1.9
Oct 12	110.0	(M)	18.6	3.8	OCT	1	114.0	18.6	3.8
Nov 15	139.0	(M)	18.5	3.8	NOV	1	154.0	18.5	3.8
Dec 13	206.8	(M)	42.2	7.5	DEC	1	206.8	42.2	7.5
Jan 17			29.4	6.1	JAN	1	ERR	29.4	6.1
					FEB	0			
Mar 21			44.3	7.8	MAR	1	ERR	44.3	7.8
Apr 6			29.5	5.2	APR	2	ERR	34.4	6.2
Apr 19			39.2	7.1					
May 2			22.6	5.6	MAY	3	ERR	18.8	4.3
May 16			23.5	4.2					
May 30			10.2	3.0	JUN	2	ERR	10.6	2.6
Jun 14			13.7	3.0					
Jun 26			7.4	2.2					
N=	6		14	14		15	11	11	11
Max	206.8		44.3	7.8			ERR	44.3	7.8
Min	25.0		2.9	0.9			ERR	2.9	0.9
Mean	95.0		20.9	4.2			ERR	21.0	4.2
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	64%	High Level of Protection	0.5
Moderate Level of Protection	36%	Moderate Level of Protection	1.5
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.84

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 10 Clark Fork above Little Blackfoot River

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	40.0	(E)	10.9	2.5	JUL	1	40.0	10.9	2.5
Aug 16	34.1	(I)	5.1	1.5	AUG	1	34.1	5.1	1.5
Sep 13	55.2	(I)	9.4	2.7	SEP	1	55.2	9.4	2.7
Oct 12	123.4	(I)	25.5	4.6	OCT	1	123.4	25.5	4.6
Nov 15	150.5	(I)	16.8	3.9	NOV	1	150.5	16.8	3.9
Dec 13	193.0	(I)	62.6	11.3	DEC	1	193.0	62.6	11.3
Jan 17			9.6	2.1	JAN	1	ERR	9.6	2.1
					FEB	0			
Mar 21	287.8	(I)	62.5	10.3	MAR	1	287.8	62.5	10.3
Apr 6	296.1	(I)	54.6	9.1	APR	2	302.3	44.0	7.7
Apr 19	308.5	(I)	33.3	6.3					
May 3	289.8	(I)	26.7	6.5	MAY	3	259.2	20.4	4.4
May 17	272.6	(I)	28.6	4.7					
May 31	215.2	(I)	5.9	2.1	JUN	2	201.9	9.2	2.5
Jun 14	243.2	(I)	11.6	2.7					
Jun 27	160.6	(I)	6.7	2.2					
N=	14		14	14		15	11	11	11
Max	308.5		62.6	11.3			ERR	62.6	11.3
Min	34.1		5.1	1.5			ERR	5.1	1.5
Mean	190.7		24.7	4.8			ERR	25.1	4.9
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	64%	High Level of Protection	0.5
Moderate Level of Protection	36%	Moderate Level of Protection	1.9
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 1.00

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 11 Clark Fork at Gold Creek Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	156.0	(M)	8.6	2.0	JUL	1	133.0	8.6	2.0
Aug 15	76.0	(M)	2.6	0.8	AUG	1	72.8	2.6	0.8
Sep 13	85.0	(M)	18.5	4.3	SEP	1	99.8	18.5	4.3
Oct 11	177.0	(M)	21.1	4.4	OCT	1	198.0	21.1	4.4
Nov 15	237.0	(M)	10.7	2.8	NOV	1	244.0	10.7	2.8
Dec 13	285.0	(M)	53.2	9.5	DEC	1	263.0	53.2	9.5
Jan 17			15.7	3.3	JAN	1	ERR	15.7	3.3
					FEB	0			
Mar 21			40.0	7.1	MAR	1	ERR	40.0	7.1
Apr 5			20.9	4.2	APR	2	ERR	25.2	4.4
Apr 18			29.4	4.6					
May 2			17.3	3.8	MAY	3	ERR	14.6	3.2
May 16			17.2	3.5					
May 30			9.2	2.3	JUN	2	ERR	8.5	2.2
Jun 14			11.1	2.6					
Jun 27			5.8	1.8					
N=	6		14	14		15	11	11	11
Max	285.0		53.2	9.5			ERR	53.2	9.5
Min	76.0		2.6	0.8			ERR	2.6	0.8
Mean	169.3		18.8	3.8			ERR	19.9	4.0
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	73%	High Level of Protection	0.5
Moderate Level of Protection	27%	Moderate Level of Protection	1.6
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.79

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN

Monitoring Station: 12 Clark Fork at Bonita

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	271.0	(M)	4.4	1.3	JUL	1	239.0	4.4	1.3
Aug 15	128.0	(M)	5.8	1.1	AUG	1	111.0	5.8	1.1
Sep 13	176.0	(M)	24.4	4.4	SEP	1	184.0	24.4	4.4
Oct 11	390.0	(M)	21.8	4.2	OCT	1	390.0	21.8	4.2
Nov 15	453.0	(M)	9.4	2.2	NOV	1	453.0	9.4	2.2
Dec 13	474.0	(E)	30.2	6.3	DEC	1	474.0	30.2	6.3
Jan 17			9.9	2.5	JAN	1	ERR	9.9	2.5
					FEB	0			
Mar 22			69.5	10.8	MAR	1	ERR	69.5	10.8
Apr 5			19.8	3.6	APR	2	ERR	30.6	4.9
Apr 18			41.3	6.1					
May 2			19.9	3.6	MAY	3	ERR	17.9	2.6
May 16			25.8	2.6					
May 30			8.1	1.7	JUN	2	ERR	8.9	2.0
Jun 13			7.9	1.8					
Jun 27			9.8	2.2					
N=	6		14	14		15	11	11	11
Max	474.0		69.5	10.8			ERR	69.5	10.8
Min	128.0		4.4	1.1			ERR	4.4	1.1
Mean	315.3		20.5	3.6			ERR	21.2	3.8
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	73%	High Level of Protection	0.5
Moderate Level of Protection	27%	Moderate Level of Protection	1.7
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.85

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 13 Clark Fork at Turah

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	659.0	(M)	3.7	1.3	JUL	1	597.0	3.7	1.3
Aug 15	284.0	(M)	4.6	1.2	AUG	1	273.0	4.6	1.2
Sep 13	239.0	(M)	10.0	2.8	SEP	1	357.0	10.0	2.8
Oct 11	515.0	(M)	10.8	2.4	OCT	1	515.0	10.8	2.4
Nov 15	633.0	(I)	5.5	1.5	NOV	1	633.0	5.5	1.5
Dec 13	701.7	(I)	14.2	2.8	DEC	1	701.7	14.2	2.8
Jan 17			8.3	2.1	JAN	1	ERR	8.3	2.1
					FEB	0			
Mar 22			39.3	6.4	MAR	1	ERR	39.3	6.4
Apr 5			11.9	2.6	APR	2	ERR	21.7	4.0
Apr 18			31.5	5.3					
May 2			12.3	2.8	MAY	3	ERR	14.2	2.8
May 16			24.0	4.1					
May 30			6.3	1.5	JUN	2	ERR	6.6	1.9
Jun 13			7.5	2.0					
Jun 27			5.6	1.8					
N=	6		14	14		15	11	11	11
Max	701.7		39.3	6.4			ERR	39.3	6.4
Min	239.0		3.7	1.2			ERR	3.7	1.2
Mean	505.3		13.0	2.7			ERR	12.6	2.7
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.4
Moderate Level of Protection	9%	Moderate Level of Protection	1.6
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.50

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 14 Blackfoot River at USGS station near mouth

Instantaneous Values				Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	665.0 (M)	3.3	1.1	JUL	1	623.0	3.3	1.1
Aug 15	383.0 (M)	1.9	0.7	AUG	1	365.0	1.9	0.7
Sep 13	395.0 (M)	1.5	1.1	SEP	1	363.0	1.5	1.1
Oct 11	369.1 (I)	1.5	0.7	OCT	1	369.1	1.5	0.7
Nov 15	564.8 (I)	1.7	0.7	NOV	1	564.8	1.7	0.7
Dec 13	583.2 (I)	4.6	1.9	DEC	1	583.2	4.6	1.9
Jan 17		4.0	1.4	JAN	1	ERR	4.0	1.4
				FEB	0			
Mar 22		15.9	4.0	MAR	1	ERR	15.9	4.0
Apr 5		7.6	2.1	APR	2	ERR	15.1	3.2
Apr 18		22.5	4.2					
May 2		13.3	2.4	MAY	3	ERR	21.7	2.8
May 16		42.1	4.5					
May 30		9.8	1.6	JUN	2	ERR	14.5	2.2
Jun 13		21.3	2.6					
Jun 27		7.7	1.7					
N=	6	14	14		15	11	11	11
Max	665.0	42.1	4.5			ERR	21.7	4.0
Min	369.1	1.5	0.7			ERR	1.5	0.7
Mean	493.4	10.6	2.0			ERR	7.8	1.8
Annual Load(tons/yr)		ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.31

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 15 Clark Fork below Milltown Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	1300.0	(M)	26.9	4.9	JUL	1	1197.0	26.9	4.9
Aug 15	655.0	(M)	6.4	1.1	AUG	1	627.0	6.4	1.1
Sep 13	729.0	(M)	5.0	1.5	SEP	1	694.0	5.0	1.5
Oct 11	899.0	(M)	5.3	1.5	OCT	1	899.0	5.3	1.5
Nov 15	1220.0	(M)	3.2	1.0	NOV	1	1991.0	3.2	1.0
Dec 13	1230.0	(E)	6.7	2.0	DEC	1	1230.0	6.7	2.0
Jan 17			3.0	1.0	JAN	1	ERR	3.0	1.0
					FEB	0			
Mar 22			13.0	2.7	MAR	1	ERR	13.0	2.7
Apr 5			11.7	2.6	APR	2	ERR	22.3	5.1
Apr 18			32.8	7.6					
May 2			20.8	3.6	MAY	3	ERR	24.2	3.2
May 16			39.0	4.2					
May 30			12.7	1.9	JUN	2	ERR	17.1	2.6
Jun 13			23.5	3.0					
Jun 27			10.7	2.1					
N=	6		14	14		15	11	11	11
Max	1300.0		39.0	7.6			ERR	26.9	5.1
Min	655.0		3.0	1.0			ERR	3.0	1.0
Mean	1005.5		14.7	2.7			ERR	12.1	2.4
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.4
Moderate Level of Protection	9%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.48

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 16 Clark Fork above Missoula WWTP

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	1300.0	(E)	25.4	4.6	JUL	1	1197.0	25.4	4.6
Aug 16	655.0	(E)	7.7	1.3	AUG	1	627.0	7.7	1.3
Sep 13	729.0	(E)	7.6	2.1	SEP	1	694.0	7.6	2.1
Oct 11	899.0	(E)	5.8	1.6	OCT	1	899.0	5.8	1.6
Nov 15	1220.0	(E)	3.1	0.9	NOV	1	1991.0	3.1	0.9
Dec 13	1230.0	(E)	7.2	2.4	DEC	1	1230.0	7.2	2.4
Jan 17			10.2	2.3	JAN	1	ERR	10.2	2.3
					FEB	0			
Mar 22			13.9	2.7	MAR	1	ERR	13.9	2.7
Apr 5			11.6	2.7	APR	2	ERR	21.0	4.0
Apr 18			30.3	5.3					
May 2			21.7	3.8	MAY	3	ERR	23.2	3.2
May 16			37.9	4.3					
May 30			10.0	1.6	JUN	2	ERR	15.6	2.5
Jun 13			20.5	2.7					
Jun 27			10.6	2.2					
N=	6		14	14		15	11	11	11
Max	1300.0		37.9	5.3			ERR	25.4	4.6
Min	655.0		3.1	0.9			ERR	3.1	0.1
Mean	1005.5		14.9	2.7			ERR	12.8	2.5
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.5
Moderate Level of Protection	9%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.51

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 17 Missoula WWTP discharge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	11.9	(I)	7.2	6.5	JUL	1	9.3	7.2	6.5
Aug 16	12.3	(I)	2.5	2.1	AUG	1	9.4	2.5	2.1
Sep 13	11.6	(I)	2.5	2.7	SEP	1	9.2	2.5	2.7
Oct 11	10.8	(I)	1.9	1.9	OCT	1	8.9	1.9	1.9
Nov 15	11.2	(I)	21.4	19.1	NOV	1	8.7	21.4	19.1
Dec 13	11.2	(I)	7.7	7.2	DEC	1	8.8	7.7	7.2
Jan 17	12.4	(I)	8.6	7.7	JAN	1	12.4	8.6	7.7
					FEB	0			
Mar 22	11.9	(I)	7.2	6.6	MAR	1	11.9	7.2	6.6
Apr 5	12.4	(I)	5.3	4.8	APR	2	12.9	6.7	5.8
Apr 18	13.4	(I)	8.1	6.7					
May 2	12.8	(I)	14.6	13.3	MAY	3	14.1	6.8	6.1
May 16	13.6	(I)	3.3	2.8					
May 30	15.8	(I)	2.5	2.2	JUN	2	12.9	6.1	5.4
Jun 13	13.0	(I)	3.7	3.2					
Jun 27	12.7	(I)	8.4	7.5					
N=	15		14	14		15	11	11	11
Max	15.8		21.4	19.1			14.1	21.4	19.1
Min	10.8		1.9	1.9			8.7	1.9	1.9
Mean	12.5		7.0	6.3			10.8	7.1	6.5
Annual Load(tons/yr)			68.93	62.16					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.29

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 18 Clark Fork at Shuffield's

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 12	1300.0	(E)	22.8	4.3	JUL	1	1197.0	22.8	4.3
Aug 16	652.0	(E)	5.0	1.0	AUG	1	627.0	5.0	1.0
Sep 13	729.0	(E)	6.5	1.9	SEP	1	694.0	6.5	1.9
Oct 11	899.0	(E)	6.6	1.6	OCT	1	899.0	6.6	1.6
Nov 15	1220.0	(E)	3.2	1.1	NOV	1	1220.0	3.2	1.1
Dec 13	1230.0	(E)	7.2	2.6	DEC	1	1230.0	7.2	2.6
Jan 17			8.6	1.9	JAN	1	ERR	8.6	1.9
					FEB	0			
Mar 23			23.8	4.9	MAR	1	ERR	23.8	4.9
Apr 5			11.4	2.4	APR	2	ERR	21.7	3.8
Apr 18			31.9	5.2					
May 2			22.5	3.9	MAY	3	ERR	23.8	3.4
May 16			39.2	4.7					
May 30			9.7	1.7	JUN	2	ERR	14.8	2.5
Jun 13			19.9	2.8					
Jun 27			9.6	2.1					
N=	6		14	14		15	11	11	11
Max	1300.0		39.2	5.2			ERR	23.8	4.9
Min	652.0		3.2	1.0			ERR	3.2	1.0
Mean	1005.0		15.2	2.8			ERR	13.1	2.6
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.5
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.52

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 19 Bitterroot River near mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13	780.0	(E)	1.8	0.7	JUL	1	907.0	1.8	0.7
Aug 16	398.0	(E)	3.6	1.0	AUG	1	370.0	3.6	1.0
Sep 13	361.0	(E)	3.4	1.4	SEP	1	383.0	3.4	1.4
Oct 11	451.0	(E)	2.7	1.1	OCT	1	451.0	2.7	1.1
Nov 16	750.0	(E)	1.1	0.6	NOV	1	750.0	1.1	0.6
Dec 13	810.0	(E)	4.5	2.1	DEC	1	810.0	4.5	2.1
Jan 17					JAN	0			
					FEB	0			
Mar 22			8.0	2.1	MAR	1	ERR	8.0	2.1
Apr 5			5.6	1.9	APR	2	ERR	15.2	3.1
Apr 18			24.8	4.3					
May 2			11.0	2.4	MAY	3	ERR	13.3	2.3
May 16			21.6	3.0					
May 30			7.2	1.5	JUN	2	ERR	12.0	1.8
Jun 14			16.6	2.2					
Jun 27			7.3	1.3					
N=	6		13	13		14	10	10	10
Max	810.0		24.8	4.3			ERR	15.2	3.1
Min	361.0		1.1	0.6			ERR	1.1	0.6
Mean	591.7		8.5	1.8			ERR	6.6	1.6
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.3
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.26

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 20 Clark Fork at Harper Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13	2040.0	(M)	8.9	2.0	JUL	1	2104.0	8.9	2.0
Aug 16	1050.0	(M)	3.7	0.8	AUG	1	997.0	3.7	0.8
Sep 13	1090.0	(M)	5.1	1.8	SEP	1	1077.0	5.1	1.8
Oct 12	1320.0	(M)	8.0	2.5	OCT	1	1320.0	8.0	2.5
Nov 16	1990.0	(M)	2.4	0.8	NOV	1	1990.0	2.4	0.8
Dec 14	2200.0	(M)	8.0	2.9	DEC	1	2200.0	8.0	2.9
Jan 18	1860.0	(M)	8.2	2.1	JAN	1	1860.0	8.2	2.1
					FEB	0			
Mar 23		(M)	13.8	12.3	MAR	1	ERR	13.8	12.3
Apr 6		(M)	15.8	3.8	APR	2	ERR	22.5	4.4
Apr 18		(M)	29.1	4.9					
May 2		(M)	19.1	3.1	MAY	3	ERR	20.9	3.0
May 16		(M)	34.9	4.1					
May 30		(M)	8.6	1.8	JUN	2	ERR	11.2	1.9
Jun 14		(M)	14.7	2.2					
Jun 28		(M)	7.6	1.5					
N=	7		14	14		15	11	11	11
Max	2200.0		34.9	12.3			ERR	22.5	12.3
Min	1050.0		2.4	0.8			ERR	2.4	0.8
Mean	1650.0		12.5	3.1			ERR	10.2	3.1
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.4
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.41

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 21 Stone Container Corporation Discharge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13	0.0	(I)			JUL	0	1.1		
Aug 16	0.0	(I)			AUG	0	0.0		
Sep 13	0.0	(I)			SEP	0	0.0		
Oct 12	0.0	(I)			OCT	0	0.9		
Nov 16	2.8	(I)	21.4	17.4	NOV	1	1.9	21.4	17.4
Dec 14	4.4	(I)	19.9	17.8	DEC	1	0.6	19.9	17.8
Jan 18	0.0	(I)			JAN	0	0.0		
					FEB	0	0.0		
Mar 23	5.1	(I)	20.7	19.9	MAR	1	14.6	20.7	19.9
Apr 5	18.8	(I)	19.5	17.7	APR	2	55.9	22.7	19.9
Apr 18	66.8	(I)	25.8	22.1					
May 2	50.2	(I)	69.1	56.9	MAY	3	53.6	65.9	57.9
May 16	31.3	(I)	57.9	53.0					
May 30	18.6	(I)	70.8	63.7	JUN	2	20.1	89.4	78.3
Jun 14	13.2	(I)	99.6	90.3					
Jun 28	13.4	(I)	79.1	66.3					
N=	15		9	9		10	12	6	6
Max	66.8		99.6	90.3			55.9	89.4	78.3
Min	0.0		19.5	17.4			0.0	19.9	17.4
Mean	15.0		48.4	42.5			12.4	40.0	35.2
Annual Load(tons/yr)			572.36	504.15					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	67%	High Level of Protection	0.8
Moderate Level of Protection	17%	Moderate Level of Protection	2.6
Low Level of Protection	17%	Low Level of Protection	3.6
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 1.60

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BU

Monitoring Station: 22 Clark Fork at Huson

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13	2040.0	(E)	7.9	1.9	JUL	1	2104.0	7.9	1.9
Aug 16	1050.0	(E)	4.1	1.1	AUG	1	997.0	4.1	1.1
Sep 13	1090.0	(E)	7.8	2.3	SEP	1	1077.0	7.8	2.3
Oct 12	1320.0	(E)	7.4	2.3	OCT	1	1320.0	7.4	2.3
Nov 16	1990.0	(E)	3.0	0.9	NOV	1	1990.0	3.0	0.9
Dec 14	2200.0	(E)	8.4	3.0	DEC	1	2200.0	8.4	3.0
Jan 18	1860.0	(E)	9.6	2.3	JAN	1	1860.0	9.6	2.3
					FEB	0			
Mar 23		(E)	11.3	3.0	MAR	1	ERR	11.3	3.0
Apr 6		(E)	10.0	2.6	APR	2	ERR	23.2	4.4
Apr 18		(E)	36.4	6.1					
May 2		(E)	18.5	3.4	MAY	3	ERR	19.7	3.0
May 16		(E)	32.4	3.9					
May 31		(E)	8.3	1.6	JUN	2	ERR	14.6	2.3
Jun 14		(E)	21.7	2.7					
Jun 28		(E)	7.5	1.8					
N=	7		14	14		15	11	11	11
Max	2200.0		36.4	6.1			ERR	23.2	4.4
Min	1050.0		3.0	0.9			ERR	3.0	0.9
Mean	1650.0		13.0	2.6			ERR	10.6	2.4
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.4
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.43

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 23 Clark Fork near Alberton

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13	2040.0	(E)	4.6	1.2	JUL	1	2104.0	4.6	1.2
Aug 16	1050.0	(E)	3.7	0.9	AUG	1	997.0	3.7	0.9
Sep 14	1130.0	(E)	10.6	2.7	SEP	1	1077.0	10.6	2.7
Oct 12	1320.0	(E)	6.3	1.9	OCT	1	1320.0	6.3	1.9
Nov 16	1990.0	(E)	2.6	0.9	NOV	1	1990.0	2.6	0.9
Dec 14	2200.0	(E)	6.6	2.4	DEC	1	2200.0	6.6	2.4
Jan 18	1860.0	(E)	7.8	2.2	JAN	1	1860.0	7.8	2.2
					FEB	0			
Mar 23		(E)	11.6	2.9	MAR	1	ERR	11.6	2.9
Apr 6		(E)	10.7	2.6	APR	2	ERR	25.5	4.5
Apr 18		(E)	40.3	6.3					
May 2		(E)	22.5	4.5	MAY	3	ERR	24.2	3.5
May 16		(E)	39.4	4.3					
May 31		(E)	10.6	1.7	JUN	2	ERR	15.2	2.1
Jun 14		(E)	21.5	2.6					
Jun 28		(E)	8.8	1.6					
N=	7		14	14		15	11	11	11
Max	2200.0		40.3	6.3			ERR	25.5	4.5
Min	1050.0		2.6	0.9			ERR	2.6	0.9
Mean	1655.7		13.8	2.6			ERR	10.8	2.3
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.4
Moderate Level of Protection	9%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.43

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 24 Clark Fork at Superior

Instantaneous Values			Monthly Average Values				
Date	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 13		1.8	0.8	JUL	1		1.8	0.8
Aug 17		2.7	0.8	AUG	1		2.7	0.8
Sep 14		9.4	2.4	SEP	1		9.4	2.4
Oct 12		7.9	2.1	OCT	1		7.9	2.1
Nov 16		2.6	1.0	NOV	1		2.6	1.0
Dec 14		4.7	1.9	DEC	1		4.7	1.9
Jan 18		4.2	1.5	JAN	1		4.2	1.5
				FEB	0			
Mar 23		8.5	2.4	MAR	1		8.5	2.4
Apr 6		7.5	2.0	APR	2		26.7	4.4
Apr 18		45.9	6.8					
May 2		18.1	3.1	MAY	3		25.8	3.4
May 16		50.3	5.6					
May 31		9.1	1.5	JUN	2		15.7	1.9
Jun 14		26.1	2.7					
Jun 28		5.3	1.1					
N=	0	14	14		15	0	11	11
Max		50.3	6.8				26.7	4.4
Min		1.8	0.8				1.8	0.8
Mean		13.6	2.4				10.0	2.1
Annual Load(tons/yr)								

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	82%	High Level of Protection	0.3
Moderate Level of Protection	18%	Moderate Level of Protection	1.1
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.40

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 25 Clark Fork above Flathead River

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	3090.0	(M)	2.5	1.5	JUL	1	3098.0	2.5	1.5
Aug 17	1570.0	(M)	2.4	1.0	AUG	1	1523.0	2.4	1.0
Sep 14	1520.0	(M)	5.0	1.7	SEP	1	1521.0	5.0	1.7
Oct 12	1850.0	(M)	5.1	1.9	OCT	1	2201.0	5.1	1.9
Nov 16	2640.0	(M)	2.4	1.1	NOV	1	2634.0	2.4	1.1
Dec 14	2800.0	(M)	2.6	1.3	DEC	1	2338.0	2.6	1.3
Jan 18	2340.0	(M)	3.4	1.3	JAN	1	2331.0	3.4	1.3
					FEB	0			
Mar 23		(M)	7.8	2.3	MAR	1	ERR	7.8	2.3
Apr 6		(M)	10.0	2.6	APR	2	ERR	26.2	4.7
Apr 19		(M)	42.4	6.7					
May 3		(M)	16.5	2.8	MAY	3	ERR	19.6	2.7
May 17		(M)	33.6	3.7					
May 31		(M)	8.6	1.5	JUN	2	ERR	11.4	1.6
Jun 14		(M)	18.2	2.2					
Jun 28		(M)	4.5	1.0					
N=	7		14	14		15	11	11	11
Max	3090.0		42.4	6.7			ERR	26.2	4.7
Min	1520.0		2.4	1.0			ERR	2.4	1.0
Mean	2258.6		11.0	2.2			ERR	8.0	1.9
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.2
Moderate Level of Protection	9%	Moderate Level of Protection	1.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.32

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 26 Flathead River near mouth

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	5560.0	(M)	1.1	0.6	JUL	1	6758.0	1.1	0.6
Aug 17	3990.0	(E)	0.9	0.4	AUG	1	4245.0	0.9	0.4
Sep 14	3920.0	(M)	0.9	0.7	SEP	1	4978.0	0.9	0.7
Oct 12	8490.0	(M)	3.2	0.7	OCT	1	7997.0	3.2	0.7
Nov 16	11400.0	(M)	2.7	0.7	NOV	1	11400.0	2.7	0.7
Dec 14	9990.0	(M)	2.0	0.6	DEC	1	9990.0	2.0	0.6
Jan 18	9420.0	(M)	12.5	1.5	JAN	1	9420.0	12.5	1.5
					FEB	0			
Mar 23	9420.0	(M)	97.6	6.3	MAR	1	9420.0	97.6	6.3
Apr 6	7860.0	(M)	12.1	1.5	APR	2	8285.0	11.5	1.4
Apr 19	8710.0	(M)	10.9	1.3					
May 3	11800.0	)M)	6.6	1.2	MAY	3	15433.3	8.2	1.2
May 17	21700.0	(M)	9.7	1.3					
May 31	12800.0	(M)	8.4	1.2	JUN	2	ERR	5.2	1.0
Jun 15		(M)	5.5	0.9					
Jun 29		(M)	4.9	1.0					
N=	13		14	14		15	11	11	11
Max	21700.0		97.6	6.3			ERR	97.6	6.3
Min	3920.0		0.9	0.4			ERR	0.9	0.4
Mean	9620.0		11.9	1.3			ERR	13.3	1.4
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.2
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	9%	Low Level of Protection	3.9
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.53

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 27 Clark Fork above Thompson Falls Reservoir

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	8330.0	(M)	2.2	1.0	JUL	1	9733.0	2.2	1.0
Aug 17	5370.0	(M)	1.6	0.6	AUG	1	5656.0	1.6	0.6
Sep 14	5240.0	(M)	1.6	0.9	SEP	1	6291.0	1.6	0.9
Oct 12	10300.0	(M)	3.3	1.1	OCT	1	9958.0	3.3	1.1
Nov 17	13500.0	(M)	2.1	0.7	NOV	1	12580.0	2.1	0.7
Dec 14	12700.0	(M)	2.3	1.1	DEC	1	11780.0	2.3	1.1
Jan 18	11300.0	(M)	2.2	0.8	JAN	1	11300.0	2.2	0.8
					FEB	0			
Mar 23	12900.0	(M)	32.5	3.7	MAR	1	12900.0	32.5	3.7
Apr 6	11900.0	(M)	10.3	2.4	APR	2	17600.0	22.1	4.0
Apr 19	23300.0	(M)	33.9	5.5					
May 3	25600.0	(M)	12.8	2.2	MAY	3	31133.3	15.3	2.1
May 17	41400.0	(M)	25.5	2.8					
May 31	26400.0	(M)	7.5	1.4	JUN	2	ERR	13.2	1.6
Jun 14		(M)	22.4	2.3					
Jun 28		(M)	3.9	0.9					
N=	13		14	14		15	11	11	11
Max	41400.0		33.9	5.5			ERR	32.5	4.0
Min	5240.0		1.6	0.6			ERR	1.6	0.6
Mean	16018.5		10.9	1.8			ERR	8.9	1.6
Annual Load(tons/yr)			ERR	ERR					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	91%	High Level of Protection	0.3
Moderate Level of Protection	9%	Moderate Level of Protection	1.3
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.36

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 28 Clark Fork below Thompson Falls Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	8710.0	(M)	4.9	1.3	JUL	1	10264.0	4.9	1.3
Aug 18	5560.0	(M)	3.3	0.8	AUG	1	6013.0	3.3	0.8
Sep 15	5541.0	(M)	1.7	1.1	SEP	1	6545.0	1.7	1.1
Oct 13	10124.0	(M)	2.6	0.8	OCT	1	10334.0	2.6	0.8
Nov 17	13337.0	(M)	2.2	0.8	NOV	1	12618.0	2.2	0.8
Dec 14	13058.0	(M)	2.2	1.0	DEC	1	12019.0	2.2	1.0
Jan 18	11382.0	(M)	2.1	0.6	JAN	1	8999.0	2.1	0.6
					FEB	0	9724.0		
Mar 23	13281.0	(M)	24.0	2.8	MAR	1	13252.0	24.0	2.8
Apr 6	12208.0	(M)	5.3	1.2	APR	2	23950.0	14.7	2.6
Apr 19	27946.0	(M)	24.0	4.0					
May 3	27726.0	(M)	25.2	3.8	MAY	3	38296.0	23.0	2.9
May 17	47931.0	(M)	36.3	3.8					
May 31		(M)	7.6	1.2	JUN	2	37185.0	15.7	1.9
Jun 15		(M)	27.2	2.8					
Jun 28		(M)	4.2	0.9					
N=	12		14	14		15	12	11	11
Max	47931.0		36.3	4.0			38296.0	24.0	2.9
Min	5541.0		1.7	0.6			6013.0	1.7	0.6
Mean	16400.3		11.5	1.8			15766.6	8.8	1.5
Annual Load(tons/yr)			190869.42	28142.15					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.4
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.35

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 29 Clark Fork at Noxon Bridge

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	10300.0	(M)	1.0	0.6	JUL	1	9671.0	1.0	0.6
Aug 18	5090.0	(M)	0.7	0.4	AUG	1	5350.0	0.7	0.4
Sep 15	4100.0	(M)	1.0	1.0	SEP	1	5908.0	1.0	1.0
Oct 12	10700.0	(M)	1.2	0.7	OCT	1	9477.0	1.2	0.7
Nov 17	15500.0	(M)	1.5	0.6	NOV	1	12120.0	1.5	0.6
Dec 15	19200.0	(M)	1.0	0.6	DEC	1	11360.0	1.0	0.6
Jan 19	9620.0	(M)	0.6	0.6	JAN	1	8166.0	0.6	0.6
					FEB	0	10500.0		
Mar 23	9530.0	(M)	5.6	1.7	MAR	1	12280.0	5.6	1.7
Apr 6	4990.0	(M)	8.8	1.2	APR	2	24160.0	7.4	1.3
Apr 19	26700.0	(M)	5.9	1.3					
May 3	29900.0	(M)	5.7	1.1	MAY	3	38230.0	6.8	1.0
May 17	42300.0	(M)	11.4	1.3					
May 31	26100.0	(M)	3.2	0.7	JUN	2	36730.0	3.4	0.7
Jun 15	50700.0	(M)	4.2	0.7					
Jun 28	24000.0	(M)	2.6	0.7					
N=	15		14	14		15	12	11	11
Max	50700.0		11.4	1.7			38230.0	7.4	1.7
Min	4100.0		0.6	0.4			5350.0	0.6	0.4
Mean	19248.7		3.6	0.9			15329.3	2.7	0.8
Annual Load(tons/yr)			57188.05	12827.06					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.1
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.11

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400

CLARK FORK BASIN MONITORING - FY 1989 MONTANA WATER QUALITY BUREAU GARY INGMAN
Monitoring Station: 30 Clark Fork below Cabinet Gorge Dam

Instantaneous Values					Monthly Average Values				
Date	Streamflow (cfs)		TSS Conc. (mg/l)	VSS Conc. (mg/l)	Month	N=	Streamflow (cfs)	TSS Conc. (mg/l)	VSS Conc. (mg/l)
Jul 14	14400.0	(M)	2.6	1.7	JUL	1	11710.0	2.6	1.7
Aug 18	6650.0	(M)	1.2	0.5	AUG	1	6765.0	1.2	0.5
Sep 15	5900.0	(M)	2.0	1.3	SEP	1	7147.0	2.0	1.3
Oct 12	13400.0	(M)	1.4	0.7	OCT	1	13400.0	1.4	0.7
Nov 17	17700.0	(M)	1.7	1.3	NOV	1	17700.0	1.7	1.3
Dec 15	22500.0	(M)	1.1	0.6	DEC	1	22500.0	1.1	0.6
Jan 19	11000.0	(M)	0.9	0.5	JAN	1	11000.0	0.9	0.5
					FEB	0			
Mar 23	10700.0	(M)	3.2	1.9	MAR	1	10700.0	3.2	1.9
Apr 6	6980.0	(M)	6.6	1.1	APR	2	18540.0	6.6	1.3
Apr 19	30100.0	(M)	6.5	1.4					
May 3	35900.0	(M)	6.1	1.1	MAY	3	38666.7	7.1	1.0
May 17	47100.0	(M)	11.8	1.2					
May 31	33000.0	(M)	3.5	0.8	JUN	2	41800.0	4.2	0.8
Jun 15	56400.0	(M)	5.5	0.8					
Jun 28	27200.0	(M)	2.8	0.7					
N=	15		14	14		15	11	11	11
Max	56400.0		11.8	1.9			41800.0	7.1	1.9
Min	5900.0		0.9	0.5			6765.0	0.9	0.5
Mean	22595.3		3.8	1.0			18175.3	2.9	1.0
Annual Load(tons/yr)			61019.79	16373.18					

Frequency (Distribution of m.a. values)		Magnitude (Multiple of 25 mg/l)	
High Level of Protection	100%	High Level of Protection	0.1
Moderate Level of Protection	0%	Moderate Level of Protection	0.0
Low Level of Protection	0%	Low Level of Protection	0.0
Very Low Level of Protection	0%	Very Low Level of Protection	0.0

SUSPENDED SEDIMENT SEVERITY SCORE 0.12

NOTE:Estimated streamflows are denoted with an (E) following the value.
Instantaneous streamflows (gaged) are denoted with an (I) following the value.
Mean daily streamflows (USGS) are denoted with an (M) following the value.
Monthly average streamflows are USGS monthly means where available.

Sediment criteria are TSS ranges for the protection of fisheries as follows: High Level <25 mg/l,Moderate Level 25-80 mg/l,Low Level 80-400 mg/l,Very Low Level >400